THE BUILDER

INCORPORATING

"ARCHITECTURE" and "THE BRITISH ARCHITECT"

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A FOOLISH DOCUMENT

A MORE inopportune, ill-conceived and badly drafted document than the Operatives' plan* for nationalising the building industry it would be hard to find. Reading it, one suspects that its signatories—the executive committee of the National Federation of Building Trades Operatives—do not really believe in it themselves and have prepared it only because they were instructed to do so at the Federation's conference last year.

The document is based on the assumption that it is inefficient to have 122,800 firms employing an average of eight men each. Possibly it is, but there is no attempt by the Federation to show in what ways it is inefficient. Such sweeping generalisations are hardly an adequate foundation for proposing nationalisation. Whether this assumption is sound or not, the Federation's proposals do nothing to deal with the situation. For what is proposed is that only firms employing more than 20 men should be nationalised. This would mean taking over about 9,000 firms covering some 670,000 operatives. This would exclude from nationalisation about 114,000 firms employing about 293,000 men. In fact, the scheme would do very little to bring about that reduction in the number of firms which the Federation regard as justifying nationalisation.

In defence of this apparent contradiction, the authors of the scheme would no doubt point to their remark that "the state should . . . concern itself with large scale operations, for we question the efficacy of its intervention on the 'odds and ends' of small decorative and repair work." We agree with the latter part of this statement, but surely it suggests that the large number of firms at present engaged in the industry is not such an inefficient arrangement after all. Moreover, if it is desirable to leave repair and maintenance to private enterprise, why should the authors of this remarkable scheme contemplate that in course of time the 293,000 excluded men would be absorbed into the nationalised service? We can only conclude that the Federation consider that ultimately we can do without men for repair and maintenance.

Incidentally, it would be interesting to know whether the Federation have contemplated the possibility that, instead of the excluded men being absorbed into the nationalised service, the reverse process might take place. After all, it is conceivable that some operatives might prefer to work for private employers rather than for a large impersonal state corporation. In our view, one of the reasons why building has for so many years past been such a peaceful industry is that the firms are sufficiently small to enable personal contact between employers and men. This relationship between employers and operatives is a highly valuable asset not lightly to be thrown away, especially as some of the other nationalised industries do not appear to have mastered the problem.

The Federation document is extremely vague as to the

* Draft plan for Nationalisation of the Building Industry. Published by the National Federation of Building Trades Operatives. *Summarised on page* 852.

THIS WEEK'S NEWS

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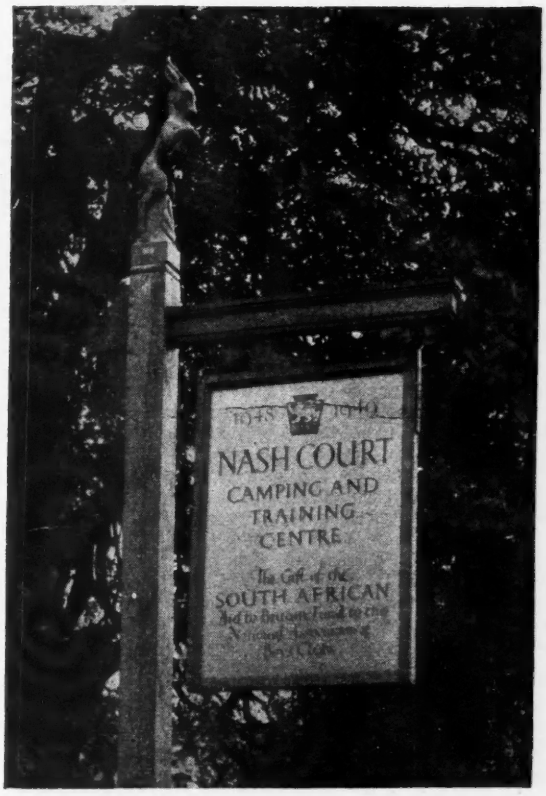
THE CORPORATION OF LLOYD'S is negotiating for a vacant site in Lime-street, opposite the present building, on which to erect a new building to provide for future expansion. 831

AS ITS COUNCIL CONSIDERS there has been a tendency of late for members of allied professions to claim a far larger responsibility for housing than can be justified, the Institution of Municipal Engineers has issued a questionnaire to its members to ascertain what connection the recipient has with housing design and layout in his authority's area. 831

MR. EDWARD MAUFE, R.A., the assessor in the competition for a proposed memorial to the Royal Naval Patrol Service (1939–45 War) at Lowestoft for the Imperial War Graves Commission, has made his award in favour of Mr. F. H. Crossley, Dip.Arch., F.R.I.B.A., of Duffield, Derby. 833

A SUGGESTION that the removal of the upper limit on wages would in itself provide all the incentive for which the industry has been striving these past two years, is made in a letter on page 836

THE VIEW that unless a clerk of works had a good technical education and equipment, and the universities and technical schools provided the right type of courses, he would fail to be a good clerk of works, was expressed by Sir Thomas Bennett in an inaugural address to the London Regional Council of Builders' Foremen and Clerks of Works. 851



THE ENTRANCE SIGN, Nash Court, the training and camping centre, of the National Association of Boys' Clubs, opened by H.R.H. The Duke of Gloucester on June 20. (*See pages* 841 *to* 843.

proposed Corporation for building. It would be a technical body taking directions on policy matters from the responsible Minister. The Federation do not appear to have made up their mind whether the Corporation should itself carry out building operations or whether it should be "the body to which all building firms would be compelled to be under contract." This vagueness on so fundamental an issue is typical of the woolliness of the whole document. The Federation have, however, clearly made up their mind on one point—namely, that the Corporation should be responsible for the manufacture of materials as well as for building construction, and the Corporation would have a section concerned solely with the manufacture of all building materials and with the purchase of such raw materials as are imported from abroad. "There would seem to be no need," says the document, "for separate departments to be instituted for the control of manufacture." We wonder what those who have spent their lifetime dealing with the problems of manufacturing a single building material, say paint or cement, will think of that.

The leaders of the Federation have built up for themselves, over many years now, a reputation for statesmanlike and constructive handling of the problems of the building industry. It is all the more regrettable that they should have prepared such a foolish document. We hope that the conference to which it was this week to have been submitted will have the good sense to reject it.

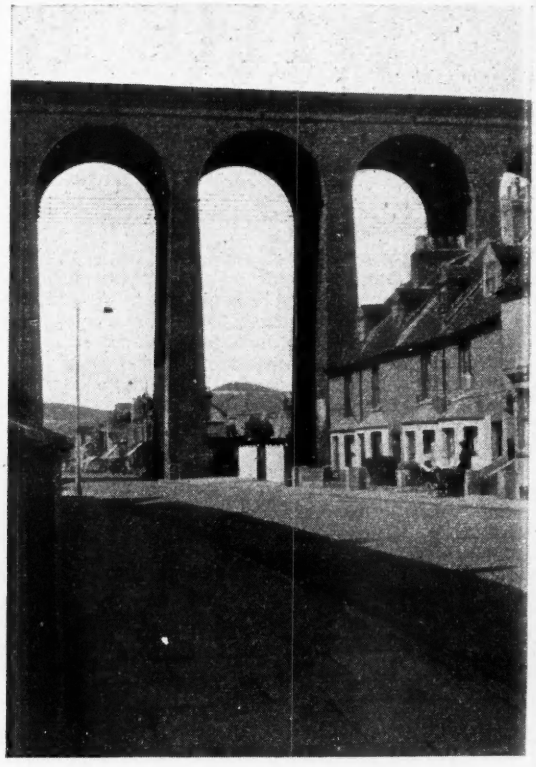
Not less foolish is that part of Sir Luke Fawcett's conference address, in which he accuses employers of opposing full employment. We had hoped that this form of platform talk had had its day in view of the current policy of full employment and incentives in building. By comparison with Mr. Farrow's talk on the Productivity team's report (also printed in this issue) the operatives' president's remarks strike as reactionary, unguarded and untrue. If this address really represents current trade union thought and is not mere recruiting stuff, with an eye on falling membership, then the N.F.B.T.O. will have to look to itself.

EVANESCENT CATCHWORDS

IT is amusing to note how certain words have a spell of popularity and then suddenly go out of use, either from overwork, ridicule, or changing taste. Just after the first world war the word "pastiche" had an extraordinary vogue. Derived from *pasticcio* (paste), it was much used by architectural critics to denote anything considered decadent in design; but it soon came to be used in the sense of "imitation," and when at last someone suggested that St. Paul's was to a large extent pastiche, it was clear that the nonsense had gone far enough and the word was quietly dropped.

Between the wars no catchword was more overworked than "functional," which seemed to crystallise a conception of all that was best and most efficient in contemporary design. Cynics, however, were not slow to point out that many despised traditional buildings were highly functional in the sense of being efficient for their purpose, which many apparently "functional" buildings in fact were not, and the word began to lose its spell. How often do we hear it in architectural circles nowadays?

"Fantasy" was for a time a word especially popular with the advanced school of architectural writers and critics, who often used it when they meant nothing more than "ornament"—much too prosaic a word for the true æsthete; it soon died a natural death. Then for a while the delightfully frivolous "sharawaggi" held the field. This was a particularly artful revival from late seventeenth-century garden literature, a Japanese word meaning nothing more than "irregular," though no one liked to spoil the fun by saying so. Its turn came too. Another word which appears to be growing in popularity is "eclectic," used to describe anything which shows any trace of continuity with the past. It was used the other day in connection with the work of Saarinen, the new Royal Gold Medallist, whose railway station at Helsinki used to be regarded as a rather original work of architecture. It is sobering to reflect that in course of time even Le Corbusier is likely to become an "eclectic influence."



FOLKESTONE RAILWAY VIADUCT, designed by Sir William Cubitt over 100 years ago. (*See Note on facing page.*)

MECKLENBURGH-SQUARE

AS reported on another page, the Minister of Town and Country Planning has given permission to the Dominion Students Hall Trust to build a residential hostel for students on the north side of Mecklenburgh-square, Bloomsbury. In making his decision, which followed a public inquiry held last month, the Minister has been influenced both by the need for such a hostel and by a faith in the capabilities of the contemporary school of architects to design a building which will harmonise in scale and proportion with Joseph Kay's terrace on the eastern side, which is to be preserved. To ensure this, he has decided that the Royal Fine Art Commission shall be consulted on the style of building to be erected, and the design when ready is to be submitted to him for approval.

This decision appeals as a right and proper solution. It was unthinkable that, as had been suggested at the inquiry, the existing north terrace should be adapted or rebuilt, in which case it could be no more than a copy of the original. It is clearly a case for a new building in harmony (not necessarily in unison) with the eastern terrace. Whether or not Mr. A. T. Scott, the architect, modifies his published design for the new buildings, which attracted some criticism, this is clearly not a case, in our view, for an extreme design; as we stated when first this matter was raised, we are here concerned with an addition to a great University where experimentalism is inappropriate.

Whatever design is finally approved, we much hope that our proposal that there should be a model constructed will be followed. Models are of value to the technical as well as the lay mind, and give a clearer picture where matters of scale are concerned than drawings can hope to do. The model could also be sent on tour subsequently and so help in raising money for the Lord Mayor's Fund which, now that the decision to go ahead on the site has been given, we shall expect to see fully subscribed. This is a project that must not lapse.

NOTES AND NEWS

Mecklenburgh-square Decision

MR. HUGH DALTON, Minister of Town and Country Planning, has given permission to the Dominion Students Hall Trust to build a new residential hostel for students on the north side of Mecklenburgh-square. This decision follows an inquiry held on May 22 and 23. In support of his decision, the Minister states that the proposed building will help to meet an urgent need for an increase in the proportion of students who can live a corporate academic life in residential colleges or hostels. At present too many are forced to live "an academic half-life in scattered and often most unsatisfactory lodgings."

The suggestion was made at the inquiry that satisfactory accommodation could have been provided by restoring the existing north terrace and adapting it for the purpose of a hostel. But the original terrace has suffered severe war damage and if it were to be rebuilt to the old pattern it would be largely a copy. The Minister does not think that this would be worth doing, nor that it would give the best results in the interest of the students. He believes it is not beyond the skill of modern British architecture to design a new building which will harmonise in scale and proportion with Joseph Kay's fine terrace on the eastern side of the Square, which is to be preserved. To ensure this, he has decided that the Royal Fine Art Commission shall be consulted on the style of building to be proposed. The design, when ready, shall be submitted to him for approval. The Minister has also decided to permit the use, for the accommodation of students, of a number of Georgian houses in the eastern terrace. He has refused permission for the use of offices of five other houses in this terrace on the ground that the whole terrace should be restored and kept for purely residential purposes.

London Architecture Medal.

THE JURY entrusted by the Royal Institute of British Architects with the award of the London Architecture Bronze Medal have made their award for the period of three years ended December 31, 1949, in favour of the Wells House (Housing Scheme), Well-walk, Hampstead, designed by Mr. C. H. James, R.A., F.R.I.B.A. The buildings were illustrated in *The Builder* for May 5 last.

R.I.B.A. Council.

FOLLOWING are the results of the election for the council of the Royal Institute for British Architects for 1950-51 :

PRESIDENT : Andrew Graham Henderson, A.R.S.A. (Glasgow), unopposed.

PAST PRESIDENTS : Sir Lancelot Keay, K.B.E., M.Arch. (Walton-on-the-Hill), and Mr. Michael T. Waterhouse, M.C., unopposed.

MEMBERS OF COUNCIL : *Elected:* G. Grey Wornum (2,133 votes), Frederick Gibberd, A.M.P.T.I. (1,944), Anthony M. Chitty, M.A., A.M.T.P.I., (1,364), C. G. Stillman (1,361), Denis Clarke Hall (1,120), and Victor Bain (Leeds) (929).

Not Elected: S. Rowland Pierce, M. S. Briggs, H. A. Dod, M.A. (Liverpool), L. H. Bucknell, J. L. Denman,. H. Conolly, J. Swarbrick, T. Nelson Cartwright, T. M. Alexander, J. Ralph Edwards, C. E. Culpin, J. B. Surman, A. H. Gardner, A. E. Eberlin, P. J. B. Harland, Cecil Kennard, A. B. Waters, and C. D. Andrews.

ASSOCIATE MEMBERS : *Elected:* Hon. Lionel Brett (1,603), P. F. Shepheard (1,095), and R. H. Matthew (1,024).

Not Elected: H. T. Cadbury-Brown, J. L. Womersley, C. S. Madeley, W. A. Allen, R. R. Fairbairn, S. A. William Johnson-Marshall, H. B. Allsopp, G. M. Whitaker, W. Barrett, C. R. Fowkes, G. F. Whitby, and S. Webster.

LICENTIATE MEMBER : *Elected:* S. L. Whitehouse (1,108 votes).

Not Elected: J. Clay, and J. C. Hall.

Royal Academy "Rival."

WE HAVE received from a correspondent a suggestion which, although, we fancy, it is not entirely new, does raise an interesting point. "Why," the correspondent writes, "should the many hundreds of Royal Academy architectural room rejects be allowed to die a natural death so far as the profession is concerned, and why cannot some energetic body organise an exhibition of such work? "

The point is well made, especially as the architectural space at the R.A. is sadly limited, and for that reason much of the work, through no particular fault of the authorities, has to be returned.

It is obvious, however, that judicious organisation would be very necessary if the idea was put into effect, for it could easily tend to draw work away from the R.A., which, despite its many detractors, has in recent years shown a commendably broader approach to its choice of work to be hung.

Nevertheless, it does seem regrettable that so much work should virtually remain unsung. With deft organising, such a show could benefit both the R.A. and the profession in general; in the case of the R.A. because it would have the effect of intensifying the keenness both of the designers submitting work and the panel selecting the best; and in the case of the profession because it would have the opportunity of viewing a considerable volume of work which, in present circumstances, passes unseen into obscurity.

New Building for Lloyd's.

THE Corporation of Lloyd's is negotiating for a vacant site in Lime-street, opposite the present building, and it is intended, if the negotiations are successful, in due course to erect on it a building in order to provide for future expansion. The present building, designed by the late Sir Edwin Cooper, was opened in 1928. The Corporation will make an announcement in due course in regard to the architect for the new building.

Municipal Engineers and Housing.

A QUESTIONNAIRE has been issued to its members by the Institution of Municipal Engineers in which information is asked regarding the recipient's connection with housing design and layout in his authority's area. In a covering letter the secretary (Mr. C. W. Scott-Giles) writes: "There has been a tendency of late for members of allied professions to claim a far larger responsibility for housing than can be justified and, in order to refute such claims, the Council are anxious to obtain up-to-date information so that we can ascertain the extent to which members of the Institution are responsible for the national housing programme."

The Folkestone Viaduct.

THE RESUMPTION this week of the passenger cross-Channel service between Folkestone and Boulogne makes it opportune, writes a correspondent, to draw attention to the viaduct that carries the boat trains across the Foord valley from Folkestone Central to Folkestone Junction. This viaduct is a fine piece of architectural construction, or engineering, and it still serves its purpose as well as ever after more than 100 years of use. It is estimated that 120 trains pass over it daily, the Dover trains at speed, and all of them far heavier than the trains of the period when it was built.

The viaduct is one of the many works of Sir William Cubitt (1785-1861), who was engineer-in-chief to the South Eastern Railway. It took two years to build and was completed in December, 1843. At that time it spanned open fields, with a mill stream running through it down to the harbour. Now it is enclosed by streets of houses and the gas works, which prevent a full unobstructed view. Nevertheless, as can be seen from the accompanying photograph, taken recently from the Foord-road, it is an imposing and inspiring structure, with its central arches rising to nearly 100 ft. above ground. Purely functional, without any decorative trimmings, it is an example of engineering becoming fine architecture.

The viaduct is 780 ft. in length, composed of 19 arches of 30 ft. span. There are two lines of rails, with ample width on the outer sides for men to walk, protected by the parapet. The piers taper downwards slightly from the spring of the arches, and batter also transversely. They are 9 ft. wide at the bottom, with a depth of 36 ft. They are faced with 9 in. of brickwork in header and stretcher courses, the arches being formed of four rows of brickwork.

A Wartime Target.

SUCH A VULNERABLE and important structure as this viaduct was naturally a target for attack by the Germans in both world wars. In the 1914-1918 war it passed unscathed, and in the second war, when Folkestone suffered severely from bombing and shell-fire, and great destruction was wrought all around the near-by harbour district, the viaduct never had a direct hit and was never out of use. There were, however, several near misses, especially a bomb which fell close to it in 1942, causing some surface damage. It was in anticipation of such happenings that tie-rods were inserted across the arches at the top, and two concrete buttresses were constructed at either end of the structure.

The Folkestone viaduct is not unique of its kind. There are other railway viaducts in this country, and especially abroad, which are higher and longer. But it merits particular notice by the discerning few who can appreciate a fine piece of work. By the majority it goes unheeded, and you will never find a view of it among the innumerable picture postcards in the Folkestone shops.

Brazilian Architecture Essay.

THE Anglo-Brazilian Society offer a prize of £50 for an essay on architecture in Brazil. The competition will be confined to members of the R.I.B.A. and of the Allied Societies overseas and elected students of the R.I.B.A. and of the Allied Societies overseas, who have passed the R.I.B.A. final or equivalent examination, or who have produced certificates from responsible architects to the effect that they have reached the required standard. The essay (in English) must not exceed 3,000 words. It will be judged by a jury appointed by the Anglo-Brazilian Society and the R.I.B.A. jointly. The subject set is "Brazilian Architecture" and the essay may review architecture of the colonial and subsequent rococo periods, relating this to the development and æsthetic trends and modern construction in the architecture of modern Brazil. Competitors are expected to make a con-

tribution to architectural thought or scholarship.

Further particulars can be obtained from the Administrative Secretary of the Anglo-Brazilian Society, 31, Palace-street, Westminster, London, S.W.1.

Professional Announcements.

MESSRS. CRUICKSHANK AND SEWARD, chartered architects and surveyors, of 16, Princess-street, Manchester, 1, have opened additional offices at Ashbourne House, 334, Wellington-road North, Stockport. Tel. Heaton Moor 5229.

A. W. J. MULLINS, L.R.I.B.A., chartered architect, has opened an office at Borehamgate House, King-street, Sudbury, Suffolk, and will be pleased to receive catalogues and samples.

COMING EVENTS

Saturday, June 24.

R.I.C.S. (JUNIOR ORGANISATION).—Visit to House of Commons. 3 p.m.

Sunday, June 25.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS. Cricket match, N.F.B.T.E. v. The Vitruvians (Technical Press), A.A. Ground, Elstree. 11.30 a.m.

Tuesday, June 27.

L.M.B.A. (SOUTHERN AREA).—Luncheon and address by Mr. N. S. Farrow, M.B.E., on U.S. Productivity Tour. Café Royal, North End, Croydon. 1 p.m.

Wednesday, June 28.

ARCHITECTURAL ASSOCIATION.—A meeting to hear an address by Professor Alvar Aalto. 36, Bedford-square, W.C.1. 8 p.m.

THE LONDON SOCIETY.—Annual meeting at which Sir Banister Fletcher, D.Litt., P.P.R.I.B.A., will speak on "The Inns of Court." Middle Temple Hall. 5.30 p.m.

Thursday, June 29.

L.M.B.A. GOLFING SOCIETY.—First Annual dinner. Savoy Hotel, W.C. 7.45 p.m.

COUNCIL FOR VISUAL EDUCATION.—Annual meeting Speaker, Mr. Noel Carrington on "Visual Education." Housing Centre, 13, Suffolk-street, S.W.1. 2.30 p.m.

HOUSING CENTRE TRUST.—Reception to members of the International Building Documentation Committee. 13, Suffolk-street, Haymarket, S.W.1. 6.30 p.m.

MINISTRY OF WORKS AND THE BRIXTON SCHOOL OF BUILDING.—The Rt. Hon. R. R. Stokes, M.C., M.P., Minister of Works, to open "Careers in Building" exhibition. L.C.C. Brixton School of Building, Ferndale-road, S.W.4. 11.30 a.m.

Saturday, July 1.

THE LONDON GARDENS SOCIETY.—Visit to Walpole House, Chiswick Mall, W.4. 3 p.m.

FROM "THE BUILDER" OF 1850

Saturday, June 22, 1850

THE LAND SURVEYORS' ASSOCIATION.—The petition adopted by the Surveyors' Association for presentation to Parl ament, for protection from interference by the Ordnance in the civil duties of the land surveyors of Great Britain, has been sent to every county in the kingdom, and, from the readiness with which it has been received and signed, it would appear the provincial land surveyors have as much and more to fear than the metropolitan from the encroachments complained of, which have assumed a position of vital importance to a large and respectable profession. . . .

OBITUARY

The late Edward T. Boardman

We announce with regret the death on June 16 of Mr. Edward Thomas Boardman, F.R.I.B.A., aged 88 years. He studied at the Slade School, University College, London, and was articled to Edward Boardman, F.R.I.B.A. Elected a Fellow of the R.I.B.A. in 1898, he was a past-member of the R.I.B.A. council. He was formerly a partner in the firm of Edward Boardman and Son, Queen-street, Norwich, and was the architect for the children's ward block, Norfolk and Norwich Hospital, in 1925. His house, How Hill, is a landmark for yachts going up the River Ant.

THE BIRMINGHAM ART GALLERY

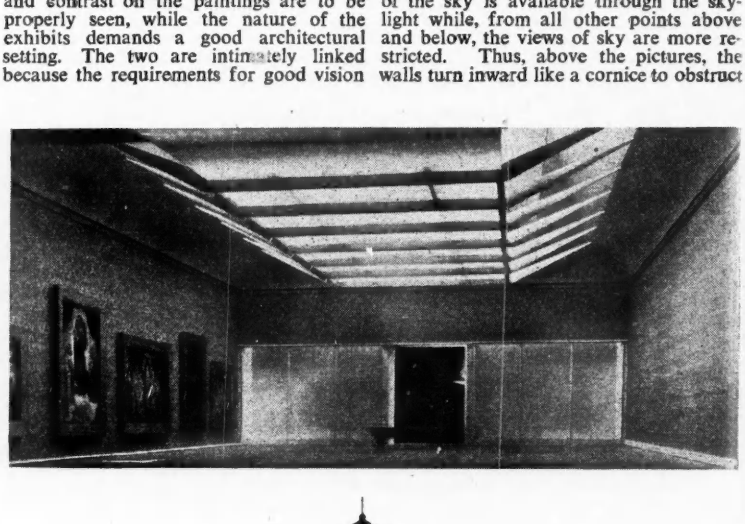
New Lighting Designs

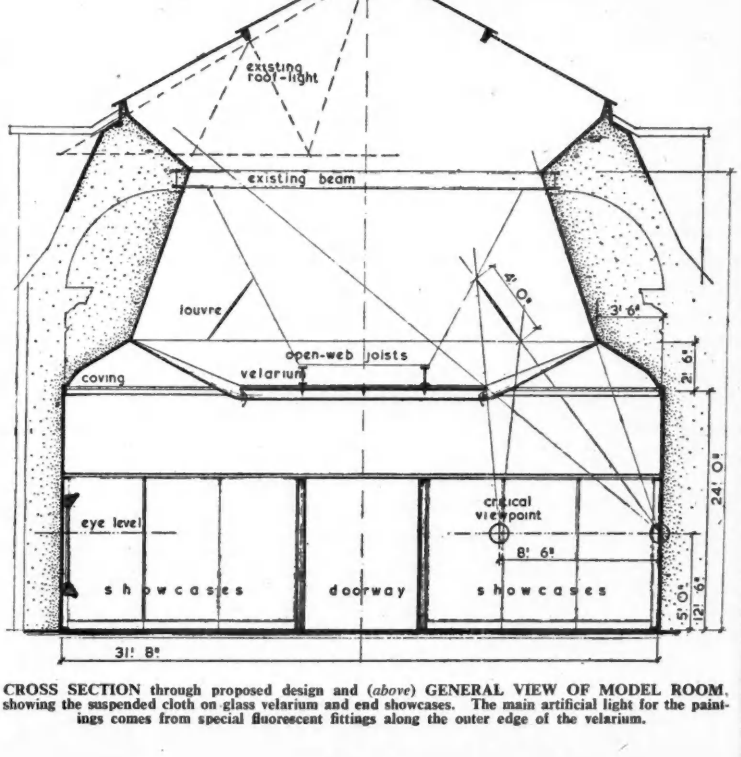
From a Correspondent

THE Building Research Station has been asked by the Birmingham Corporation to advise on the reconstruction of damaged rooms in the City Art Gallery. The Station has had an interest in the problems of lighting art galleries since the war. Its studies have included a programme of visits to various galleries in Britain and abroad, and methods of lighting have been developed on models designed and built at the Station. The problem has both technical and architectural interest. Exceptionally good conditions for vision are required if colour and contrast on the paintings are to be properly seen, while the nature of the exhibits demands a good architectural setting. The two are intimately linked because the requirements for good vision influence both the shape of the room and many of the architectural details.

Major Design Principles.

Treatment is derived mainly from two major principles: one that the paintings should hang in the strongest light, and the other that the brightness of other surfaces in view should not be greater, and should preferably be a little less, than that of the paintings. The first of these requirements is met in the design for the Birmingham Art Gallery by ensuring that from the paintings themselves a full view of the sky is available through the skylight while, from all other points above and below, the views of sky are more restricted. Thus, above the pictures, the walls turn inward like a cornice to obstruct





CROSS SECTION through proposed design and (*above*) GENERAL VIEW OF MODEL ROOM, showing the suspended cloth on glass velarium and end showcases. The main artificial light for the paintings comes from special fluorescent fittings along the outer edge of the velarium.

the view of the sky, and below them the light is restricted by the suspended laylight. Such a requirement plays a major part in determining the cross-section through the design.

The second requirement is more subtle. It is most imporant that it should not be possible to see the sky when looking at the paintings, because under this condition the eyes will partly adapt to outdoor brightness and full sensitivity to colour and contrast will not be possible. The function of the laylight is to prevent people from seeing the sky while allowing a reasonable amount of light to come through to the floor. The recommended laylight is a form of "egg-crate" louvering, which has the advantage that it can be coloured to give the right brightness for optimum visual conditions. In one room a trial is likely to be made of a special cloth-on-glass treatment in place of the "egg-crate" louvering.

The width of the laylight is restricted by the requirements for full view of sky from the paintings. Strictly the laylight should be wider than in the present design in order to cut off any view of sky between the edge of the laylight and the edge of the skylight as one approaches the paintings. It could be wider if it were lower, but the room proportions would be affected. To overcome this difficulty a single louvre has been introduced above the gap on each side of the laylight in such a way that it offers no obstruction to light for the pictures, but screens the undesired view of sky. In this way the bright views of sky have been controlled and, by a suitable choice of material for the laylight, the levels of illumination in the main body of the room may be adjusted without reducing the light on the paintings.

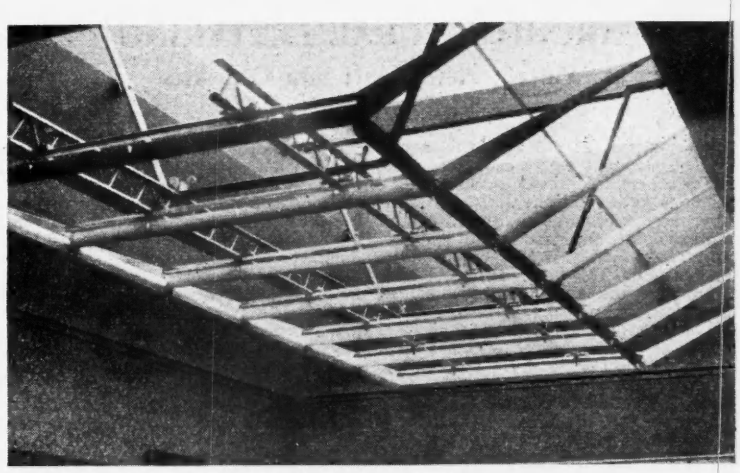
Background Surfaces and Colours.

It is also necessary to consider the brightness of the paintings in comparison with those of other surfaces within the gallery, particularly the picture walls. Studies of a large number of paintings showed that the great majority have a reflection value of about 15—25 per cent., and this indicates that the best background for paintings would have a value of about 20 per cent. Such low values would not be possible in a gallery with an exposed skylight without the risk of contrast, which would make it seem rather dark and gloomy, but it is perfectly feasible in a gallery with controlled lighting. This in turn led to a study of the desirable colours and other characteristics of surfaces for the background of paintings, from which it was decided that probably the most successful for general use would be one of red. Attention has been given to the exact colours to be used, the nature of the pattern to be provided, and so on.

Having determined the surface treatment for the main wall it was then possible to consider the treatment of other wall surfaces to produce similar brightnesses with the varied amounts of light falling upon them.

Reflection in Glass.

The problem of reflections in glass on paintings runs like a thread through the whole of gallery design. Glass seems to be used chiefly to keep the paintings clean, but it does this only with moderate success. No way is known by which irritating reflections can be entirely avoided, and the real solution seems to be to leave the glass off. This means that the air in the building has to be clean. Air-conditioning would ensure this, but is expensive. An alternative may be to draw in filtered air, and rely on a slight positive pressure inside the building to avoid the infusion of dirty air. This is being considered.



VIEW LOOKING UP TO ROOF LIGHT. The velarium itself has been removed to show support beams and louvres.

The artificial lighting forms part of the design. From the experience obtained by the Ministry of Works on the National Gallery it is known which position will give the best intensities and distribution of light without excessive wattage, and it is fortunately convenient in the present design to fit fluorescent light sources into the edge of the laylight, which is the right point. Other sources, mainly tungsten, will be fixed in the space above the laylight to supplement the fluorescent lighting, and in this way the various surfaces in the room will be lit in very much the same way as they are in daytime. A mixture of tungsten and fluorescent is proposed in order to give a good colour to the light.

In the present state of architecture it is impossible to deduce ideas in this detail without the aid of model studies, particularly as they concern exact amounts of light reaching different surfaces. The ideas are applicable in principle to other conventional top-lit galleries.

Previous Experience.

In attempting a new treatment of an old problem it is always desirable to look doubly carefully at what has gone before. Established traditions and common experience often have a great deal to teach if they can be fully understood. Art galleries are exceptional. No single tradition has been established, though the search for it has been vigorous. Attempts have been made to use each of several general arrangements, and all have been criticised. It seems to be a fact that the problem was too complex to solve merely by experience, though F. P. Cockerell might have set foot on the right course if recommendations made by him for the National Gallery in 1850 had been carried out. It is interesting that the recommendations by the Station, coming a century later, and from a laboratory rather than from practice, bear a strong resemblance to Cockerell's ideas.

It should not be assumed, of course, that the solution which is applied in this case to an existing gallery would be the way to design a new one; current trends in display techniques and other reasons would indicate a variety of solutions. The general reconstruction work is in the hands of the City of Birmingham Public Works Department, under Mr. H. J. Manzoni, C.B.E., City Engineer and Surveyor.

COMPETITION NEWS

R.N.P.S. MEMORIAL, LOWESTOFT

THE ASSESSOR, Mr. Edward Maufe, R.A., in the competition for a proposed memorial to the Royal Naval Patrol Service (1939-45 War) at Lowestoft for the Imperial War Graves Commission, has made his award as follows :—

FIRST—Premium £100—(Design No. 11).—Mr. F. H. Crossley, Dipl. Arch. (Liverpool), F.R.I.B.A., Netherby, Avenue-road, Duffield, Derby.

SECOND—Premium £60—(Design No. 16.—Mr. H. St. John Harrison, F.R.I.B.A., 1, Babmaes-street, S.W.1.

THIRD—Premium £30—(Design No. 6).—Mr. J. H. Finch, 22, Rainsford-avenue, Chelmsford, Essex.

In his report, Mr. Maufe states :

I have to report that 25 designs were submitted in this competition and have been examined by me. The site for this Memorial is a fine one in Bellevue Park, overlooking the sea, and is somewhat unusual in that it is approachable from several directions, therefore it was essential that the memorial should have nothing that could be considered as a back elevation. Several of the designs had to be ruled out because their authors concentrated on one axis. None of the three premiated designs has this defect.

No. 11 [Mr. F. H. Crossley] is an inspiring solution to the problem, and one which will produce a memorial worthy of the Royal Naval Patrol Service. The design is put forward in a very competent set of drawings with a well-considered report. With regard to cost, the author of this design is optimistic in his estimate of the builders' work, and in my opinion the total cost of the memorial, as drawn, is likely to exceed the stipulated cost of £8,800 up to the 10 per cent. increase allowed in the conditions, but the design is clearly capable of modification.

The suggested improvements for the layout of the area surrounding the memorial would produce a better and more orderly setting than at present.

Design No. 16 [Mr. H. St. John Harrison] gains a well-deserved second premium. It is a simple and straightforward solution to the problem but has not the inspiration of the winning design.

Design No. 6 [Mr. J. H. Finch] is a very interesting scheme put forward with a carefully considered report, but the main shaft is negative in character and the design generally seems to express a metal rather than a stone construction.

ARCHITECTURAL LETTERING

Putting New Heart into Old Arts

By SIDNEY POOL, M.G.L.C.

THE purpose of this article is to emphasise that where carved lettering and ornament are already used in modern buildings and architectural works generally, there is often much room for their improvement: and that where they are not already used, there are opportunities for their use. The writer wishes to make a plea for the greater employment of these crafts in association with present-day architecture and town planning, and for an unflagging insistence on a high standard of work.

Despite the influence of Eric Gill, Percy Smith and others, some architects still allow their buildings to be marred by poor lettering and all too frequently a commemoration tablet in a prominent position carries mediocre work, with the style often quite out of key with other and better lettering on the same building.

Percy Smith, in his last book, gave the following general considerations regarding lettering in connection with buildings: "(a) Conformity to the architectural lines, (b) a due measure of uniformity, (c) regard for the appropriate scale; other points of importance are ornament and colour, and maintenance." ("Civic and Memorial Lettering.")

No rule of thumb can help very much in determining the size, character, and disposition of lettering, but it must "look right" to the trained eye, and a little experimenting on scale drawings and sketching the lettering on the actual site helps to establish the best relationships. At this early stage the assistance of the carver might be enlisted.

In modern times the tendency to specialise is somewhat overdone, so that a horizontal division of labour between designer and craftsman is often unnecessary and frequently injurious. It is desirable that the artist-craftsman be invited to design the inscription he is to carve, or at least be consulted about it. He has first-hand experience of the various materials and tools and knows what sort of work can safely be done with them with a due economy of labour. When the carver is actually confronted by the stone, certain adjustments may be indicated: there may be a discrepancy between the size of the drawing and that of the inscription space, or a fossil in the stone which may be avoided by a little re-designing. If the craftsman is also the designer he will feel quite happy in making the necessary re-adjustments, otherwise he may work in doubt, or time may be lost in contacting an elusive designer. The situation is mitigated when designer and carver are in complete sympathy and have worked together over an appreciable period; even then there is not the same complete satisfaction that one may enjoy by doing the work in its entirety.

When considering lettering and ornament care should be taken not to confuse quality with mechanical precision. To the engineer perfection may be synonymous with mathematical exactitude. There may be a certain thrill in approximating that sort of perfection, but for inscription lettering excellence can only mean beauty and legibility: or, more precisely, beauty in the service of legibility. Thus, for example, an inscription is more readily readable if it possesses an even texture and a fine rhythm; by the same tokens it is also more beautiful. This may seem a palpable point, but it is one that merits more attention than it usually receives.

Inscriptions which might be said to "belong" to a building should be designed as integral parts of the design, and need not look like after-thoughts. Interior walls lined with a suitable stone or marble can be considerably enhanced by inscriptions carved directly on the lining.

Mural tablets, such as seen in churches and secular buildings, call for special consideration. A little more adventurousness in the choice of stones and marbles would be refreshing and the actual panel for lettering should be carefully selected in order to avoid blemishes or heavy markings which would impair the legibility of the inscription.

Scope for Delicate Work.

Tablet carving constitutes an exciting form of work, not necessarily confined to memorial subjects. Tablets offer scope for a delicate form of lettering and ornamentation and, owing to their more often than not sheltered position, allow letters and heraldic subjects to be decorated with colour and metal without great risk of deterioration. Indeed, the colouring of tablet inscriptions is often a necessity as an aid to legibility when the letters are small or situated in a dim light. The painting or staining, however, needs careful execution and the all too prevalent use of artless stove enamel should be avoided like the plague.

When colouring is required simply to increase legibility a thin grey or earth-colour staining is sufficient. Staining has the advantage that it does not tend to clog the letters or obscure the texture of the stone as does opaque paint. When the environment calls for a note of colour the lettering and arms may be decorated accordingly. Thus the colouring fulfils the dual purpose of augmenting legibility and serving as a foil to the surroundings.

On exterior work, in exposed positions, colouring of lettering on unprepared stone should normally be avoided. It does not wear well without periodical attention. It is therefore a sensible economy to carve such lettering large and deep enough to be read at a distance without the help of colour.

In connection with tablet inscriptions a more frequent use of the "lower-case" alphabets should be encouraged. They are especially useful when the inscription is long and space limited; and for use with capitals when the capitals are required for emphasis. Moreover, they may be read with greater alacrity.

With regard to carved and plastic ornament, the question arises as to whether there is any worth-while place for these cinderella arts in modern architectural design, but there might well be the opportunity to introduce ornament of bold and original design in keeping with contemporary architecture.

Technical Treatment.

The technical treatment of carving must, of course, be decided with proper regard for the particular building it is to adorn. It must convey the right feeling relative to its place and purpose. A certain amount of interior carving is "licked up," and even polished. This highly finished work has its place, but at the same time some would like to see more opportunities for leaving the carving with the chisel marks crisply evident, or even left from a fine claw-tool, with a tooled ground. Such a technique is saving in tedious labour, and lends carved work sparkle and character.

Alphabet and numerals designed and carved by the author in slate.

Opportunities in New Towns.

The rebuilding of demolished areas and especially the construction of new towns, offer great opportunties for the glyptic, graphic and plastic arts. In so far as the task of rebuilding and town planning is controlled by a central co-ordinating authority, that body is urged to consult artist-craftsmen with a view to completing and enriching the newly-built areas and towns. We in Great Britain are endowed with a remarkably fine heritage of carving against which to measure our skill and ingenuity, but only by re-awakening a sustained demand for good carved lettering and ornament will these crafts be revived and preserved. In this regard the President of the R.I.B.A. has written: "Sir Giles Gilbert Scott tells me that while he had no great difficulty in obtaining carvers for work on the new House of Commons, it was very noticeable that the men were mostly elderly and that few young carvers were to be seen. He ascribes his lack of difficulty in obtaining working carvers at that time to the fact that very little carving was being done elsewhere. I am told also that

whereas there were approximately 400 craftsmen in the London area in 1941, here are now barely 70, most of whom re over middle age. Unless some steps an be taken to increase the supply of ecruits we shall be faced with an impossible situation when the time comes or the restoration of the city churches nd guildhalls. I would appeal to all rchitects and, through them, to their lients to do all that is possible to keep live the craft which has done so much o beautify the interior of buildings in his country in the past. Even very small ommissions for carving will go towards elping the craft to tide over the lean period until restoration work gets under way." (*Monumental Journal*, Dec., 1949.)

Mr. Waterhouse is to be thanked for this warning and appeal, at the same time one must remember the cause of this scarcity of craftsmen. In recent times building work has had little to offer the carver, and monumental work even less. Let us remember that this country was once noted for its stone carving, and even exported carved work! Given the promise of continuous work, under conditions fitting to the tradition, skill and status of craftsmen, it is possible to revive and perpetuate these crafts which have served us so long and so well.

ORGANISATION OF ARCHITECTS' OFFICES

0.—*The Office of A. E. RICHARDSON, R.A., F.R.I.B.A.*

HAPPY is the professional man who can enjoy the old-fashioned ort of practice which begins at sunise and ends perilously near midight, for this occupation demands etachment from mundane affairs and n all-embracing interest in art.

At one time, architects were painters, culptors and devisers of buildings. his was before the days of catalogues, when conditions were human nd life more tranquil. It is, however, ossible to recapture the spirit of ther times and to endow the present ay with geniality. Despite so-called progress," architecture refuses to be urried, neither is it responsive to exedients and shams. This sounds like noralising and will be distasteful. eople do not want second-rate philoophy nor the vague sayings of a isionary. Yet, if architecture is to egain some of its secret savour, it nust be related to the inspiring themes f tradition.

Now, how does such a practice work? Who prepares the plans and rites the letters and who organises he business? Who makes applications or licences, argues with the War Damge Commissioners, interviews local uthorities, issues certificates, and oothes irate clients? Who fills up .A.Y.E. forms and shoulders the urden of office routine—that is the uestion? Who is this mysterious erson, for the old-fashioned architect nows nothing of these things yet he is esponsible for providing the necessary unds, keeping appointments and for igning cheques which are presented o him with the regularity of an almanck?

First and foremost is the secretary, whose task it is to keep the chief cquainted with his commitments. It s she who acts as amanuensis, recordng the written and spoken word. With er is the assistant secretary. There is he partner, youthful, energetic, eager o anticipate the future, painstaking nd critical. This last, then, is the mysterious figure who guides the automaton, who accepts strange theories nd regards history as heresy. But, e, too, has ideas which he most tactfully asserts; and then there are the ndispensable assistants, all qualified rchitects who have long since left the lamour of the recognised schools nd can point with pride to their degrees and diplomas. And so, through the various divisions of the office, to the fledgelings who have just become chartered dwarfs.

Now in this old-fashioned practice everybody shares in the evolution of a building. The chief interviews a client, listens to the requirements and then and there sketches a plan on the spot, a method which not only saves postage and time but determines the client whether or not to go on with the architect; the lure of the sketch is generally so strong that the client who begins with "Dear Sir," ends in becoming a lifelong friend. The sketch is now studied and developed, probably in the quiet of the evening; then come discussions with the partner, modifications, fresh sketches, and finally a sketch design which has the accuracy of a working drawing. From now on the building proceeds, stage by stage.

A different building is allocated to each senior member of the staff. It is the duty of these architects to see the especial building through; thus, from the eighth-scale drawings to the full sizes, the work is personally supervised and at every stage the details are checked and vetted by both partners.

During the actual process of building numerous craftsmen are interviewed, models are made and every detail which savours of the catalogue is most vigorously eschewed. Special drawings are made for locks, ironmongery, cornices and details of every description. And so the building grows.

At intervals all kinds of strange commissions flood in. Here a lectern for Westminster Abbey; there a monument for Lincoln Cathedral; here the supervision of stained glass for another cathedral. There are requests for special locks and door handles, lead rain-water heads or a whole set of garden furniture. Sometimes the request runs to a carpet or a set of altar frontals in needlework. There are such excitements as elaborate designs for wrot-iron gates. This old-fashioned practice demands skill in most things; there are schools, colleges, clubs, historical monuments, and the repair of ancient churches and castles of almost every period. On the Metropolitan side there is the rebuilding of bombed premises and the design of blocks of offices. Dare we forget the domes which are miniatures of St. Paul's, or street lanterns which are reactionary?

The strange thing is that such an office runs so smoothly. There is a place for everything, and everything is in its place; the staff arrive at nine o'clock to the dot, yet the modern filing system is unknown and "up-to-date" office efficiency is conspicuous by its absence. But there is no lack of enthusiasm, for it is a place of freedom where all come and go as they please, the controllers visiting buildings and living like men and not performing like robots. It is the spirit of taking a share in the production of works which are old-fashioned that is inspiring to this small society.

And then there are those buildings which are required in distant parts of the kingdom—in the wilds of Northern Ireland or in the Lowlands of Scotland, and, on occasion, colleges in the precincts of universities. Such works entail much travelling and it is essential that the chief should be everywhere at once. This is accomplished by hiring motor cars which form travelling offices. On occasion the chief is accompanied by the partner, assistants and secretary.

In addition to the main office, there is another office in the country where the more fortunate assistants are left very much to themselves; they can roam in a garden, make tea at their leisure and enjoy a country home which the chief rarely sees. But when he does return he finds the work ready for his cognisance and devoted assistants even prepared to give up their leisure.

And there is yet another office; this exists within that mysterious labyrinth known as Somerset House. It is a privilege having rooms overlooking the river, and an even greater privilege to be allowed to drive through that glorious vestibule on the way to the office.

The truth is, an architect should be able to practise architecture at a moment's notice wherever he is. Norman Shaw used to send details on postcards; Pugin drew with a carpenter's pencil; the mediæval architects scratched on the cathedral walls and on the stone pavings. You can see the sgraffitti they made in many churches to-day. Of course, the kind of practice described would fill with dismay those whose aim is the mechanisation of the crafts. But the old-fashioned practice has its compensations. One can at least live with hope and illusions, and one is actually prepared for adversity because one becomes accustomed to improvisation.

It has been my privilege to peep into the drawing offices of many architects during the past half century, and during this time my experiences have been instructive. I know architects to be a kindly race, for they are hospitable, learned and tolerant. It is tolerance which should be cultivated, not that damnable efficiency which belongs to the financial side of professional enterprise. For architecture is a pursuit for the artist. Those who enter on its thorny paths do so at their peril if they walk alone.

CORRESPONDENCE

Housing and the Municipal Engineer

To the Editor of *The Builder*.

SIR,—Our friends in the Institution of Municipal Engineers consider that members of allied professions tend to claim a far larger responsibility for housing than can be justified, and have circulated a questionnaire to members holding chief appointments in the hope that it will produce evidence to refute such claims.

These members are asked *inter alia* to say whether they are registered architects, and those whose authorities employ a chief architect (presumably a city architect, borough architect or housing architect) or private architects for the construction of their houses, are asked to state the number completed or let to contract.

This laudable effort to give full credit where it is due would be much more realistic and of more constructive value if all engineers who claim responsibility had been asked to answer the following question:—"Is the housing for which you are nominally responsible undertaken by architects subordinate to you?"

The extent to which the replies were in the affirmative would provide really useful information as to the number of authorities whose technical-professional departments are in need of reorganisation and would at the same time provide the justification of the claims of the architectural profession.

If there were any answers in the negative they would indicate where there is need for immediate correction, for all good municipal engineers recognise the sphere of the architect; it is a pity that so many of them insist on assuming responsibility for his work.

Leonard C. Howitt,
President, City and Borough Architects' Society.

Manchester, 2.

Wages: "Taking the Lid Off"

To the Editor of *The Builder*.

SIR,—Predominant among the reasons given for the greater relative productivity of the operative in U.S.A. we have (a) general attitude to work, and (b) fear of the sack. Of course, there would be many other contributory causes, but at this stage one looks for fundamentals.

What creates the favourable attitude to work so prevalent on the sites visited by the team? Apparently it is not incentives in the form of payment by results as we understand them. The report does give us a clue. In Chapter 7 we read of the greater flexibility of the wage-regulating machinery. There is a story exemplifying this greater flexibility—a story about the general foreman in U.S.A. who refused to engage any other than "four-dollar men," thus ensuring the productivity on his side by buying labour of the highest calibre.

This leads us to the question: Are the U.S.A. negotiated rates minimum rates or maximum rates, or both? If they are merely minimum rates then surely there is an incentive given to every operative to justify a higher rate. In this country the wage-negotiating machinery fixes a rate. The "rate" is both minimum and maximum, subject only to the additional increment which may arise by the operation of expensive and complicated bonus systems.

How far would it help us to improve the attitude to work if the lid was taken off the rate-box and the negotiated rates became minimum rates, but not maximum? One feels that those on the National Joint Council (both employers and operatives) have good reason to fear the immediate result. The analogy of Pandora's box is obvious, but it is not complete, because the industry is already in torment with the lid on.

I suggest, Sir, that the removal of the upper limit on wages would in itself provide all the incentive for which the industry has been striving these past two years. Is there another industry in this country burdened by a similar deadweight on the permissible earnings?

Chicago.

Private House Building

To the Editor of *The Builder*.

SIR,—On May 4, the Minister of Health stated he had considered the provision which ought to be made for owner-occupiers in the programme for houses to be built under licence. After stating that experience had proved to him that the claims of those in urgent need made it necessary, in many districts, that nine-tenths of the houses built should be council houses, the Minister added he had decided to restore to housing authorities the discretion to issue licences up to a maximum of one-fifth of their allocation where such an increase is justified by the needs of the applicants.

It would now appear from Circular 57/50, issued by the Ministry to housing authorities, that this discretion will apply to the allocation for 1951 and is not, therefore, necessarily immediately operative. Whilst this may have been the Minister's intention when making the statement in the House it was not made clear with the result that my members and, doubtless, other architects also are being pressed by clients to obtain the benefit of this concession. In a further statement on June 15, the Minister said that local authorities will now be advised of their 1951 allocation and may issue licences to private builders up to a maximum of one in five—presumably forthwith.

The purpose of this letter is to ensure that the responsibility for delay hitherto is not laid upon architects, who are acutely conscious of the need for action in housing.

A. E. Ward, Secretary,
Institute of Registered Architects.

47, Victoria-street,
London, S.W.1.

Quantity Surveyors and Commercial Firms

To the Editor of *The Builder*.

SIR,—With reference to the correspondence appearing in your columns on this question, may I confess my utter dismay that "the complete ignorance" of "Chartered Q.S." has become so apparent, because he seems to be in the same sad state that I am in.

He evidently considers, as I do, that a quantity surveyor is a professional man—unbiased and independent—whose basic task is to prepare bills of quantities for use by tenderers. A quantity surveyor as such is not, in my opinion, a builder's employee who usually works on bills prepared by other people and, maybe, occasionally prepares his own rough quantities for small jobs.

How wrong I now appear to be! But perhaps my ignorance is shared by the majority of the building industry and the ancillary professions?

Independent Q.S.

King's Norton,
Birmingham.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

Prizes for Public and Secondary Schoo

The R.I.B.A. offers annually for co petition between boys and girls in Publ and Secondary Schools, prizes totallin £10 10s. in value for the encouragemen of interest in architecture. A prize wi be given for the best original essay o not more than 1,000 words illustrated b sketches dealing with a building or grou of buildings with which the competito is personally acquainted; and anothe prize will be awarded for the best sketche or scale drawings of a building or pa of a building in pencil, ink or colou

The work submitted in competition fo these prizes should be sent to the Secre tary, R.I.B.A., 66, Portland-place, Londo W.1, by the headmaster or headmistres of the competitor's school and not b the competitor. Drawings and essay must be signed by the competitor, an the name and address of his or he school clearly stated. For the compe tition in 1950 all work must reach th R.I.B.A. by October 6.

Faculties of Architects and Surveyors

The first annual general meeting of th Central London Branch was held at S Ermin's Hotel, Caxton-street, London, o May 30. The chairman, Mr. Leonar Blausten, reported on the year's activi ties, and told his audience that the branc had held nine meetings since its inaugura tion in August last year.

The finance committee, he said, ha collected about £15 since its formatio a sum which he considered was usef but not enough in view of the fact th the branch represented nearly 200 mem bers. The entertainments committee d served great commendation for the e cellent way in which they had organise the first annual dinner and ball, held a the Savoy in January.

With regard to the general matters o the branch, Mr. Blausten said that meeting had been arranged between th Institute of Registered Architects and th Incorporated Association of Architect and Surveyors to consider proposals fo closer co-operation in the arrangement o programmes and the exchange of ideas i the common interest of the kindred pro fessional bodies. Long discussion ha taken place on the subject and certain decisions were arrived at, which were t be reported back to the committee o each of the Associations. Unfortunately the I.A.A.S., he understood, were no willing to go ahead with the scheme, bu the branch was working in close col laboration with the I.R.A. with encourag ing results.

When the election of officers took place there was only one nomination fo the office of chairman, and Mr. Blauste was re-elected for a further year of office Nominations were taken for the posts o hon. treasurer and hon. secretary, an Mr. Champ and Mr. Soar were unani mously elected to these duties. The fol lowing were elected to serve on the com mittee:—L. Blausten, T. G. Matsell P. G. S. Fox, W. W. Kerr, J. Rigby and L. M. Rose. A number of co-opte members were also elected.

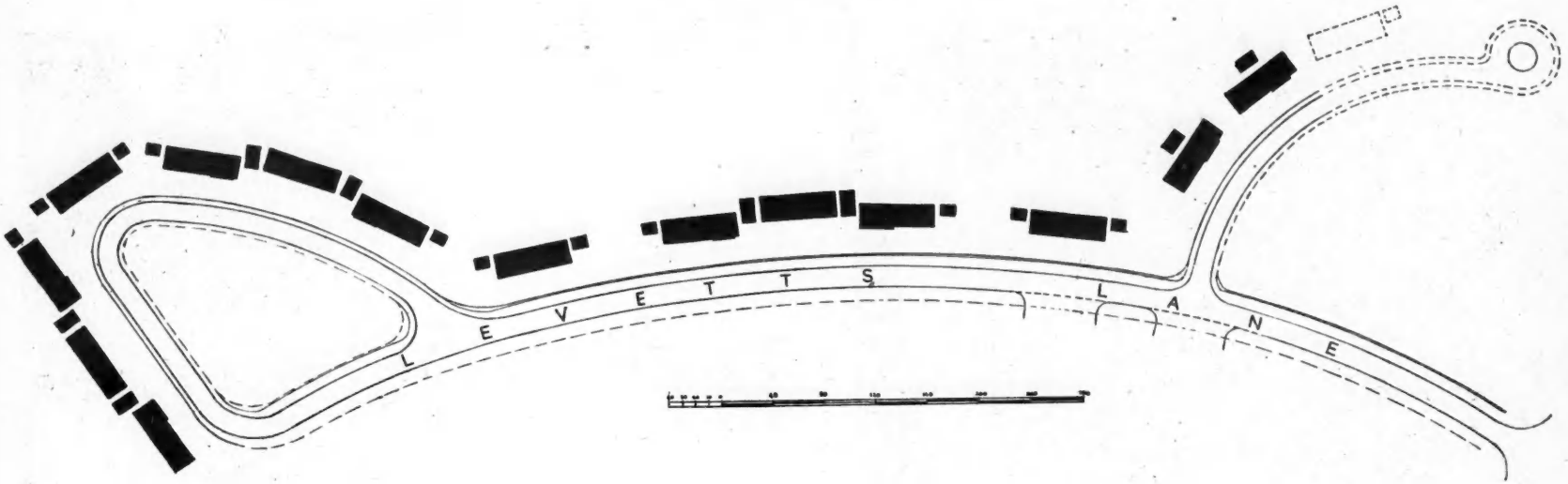
C.B.E. Award.

Lieut.-Col. W. W. Dove, T.D., D.L chairman of Messrs. Dove Bros., Ltd builders, received the C.B.E. in th Birthday Honours List published o June 8.

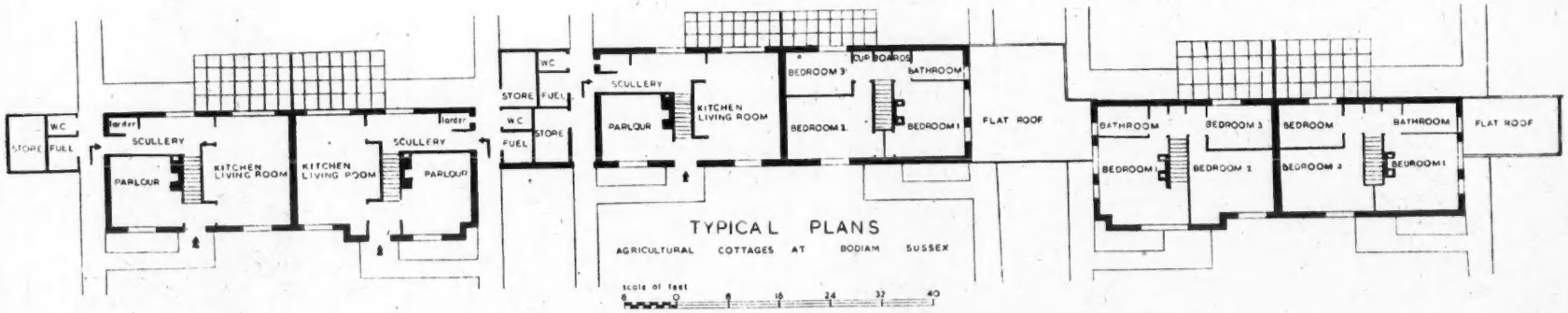
General view showing varied treatment of the front doors. *Below:* The Close at the western end of the site.

NEW COTTAGES AT BODIAM, SUSSEX

PHILIP D. HEPWORTH, F.R.I.B.A., ARCHITECT



The layout.



COTTAGES AT BODIAM, SUSSEX. Typical plans. **PHILIP D. HEPWORTH, F.R.I.B.A., ARCHITECT**

SUBSEQUENT to the war, a long term programme was outlined for certain developments to the village of Bodiam, Sussex. This village lies in a charming setting and, in addition, possesses the superb and widely known Castle. It was desired, therefore, that all new work should as far as possible conform to the general rural character of the neighbourhood.

The group of cottages here illustrated is one of the earlier items that has been put in hand. These were financed by the Bodiam Housing Association sponsored by Arthur Guinness Son and Co., Ltd., and the Battle Rural District Council, and designed for the use of local agricultural workers.

The site chosen was the only one available and although rather exposed and some little way from the Green, which is the social centre of the village, it is probably more healthy than the lower levels by the river.

The layout closely follows the contours of a sharply sloping site, and land is available for additional cottages.

Materials employed are 11-in. facing brick walls, with steeply sloping pantile roofs and with bedrooms lit by dormer windows. This system enables the roof line to be brought to below the first-floor windows, and gives something of the low, restful and comfortable appearance of the older cottages. Plans are of the living room with separate parlour type, and the former has been made as large as possible. The staircase is a single straight flight between walls. This is both an economy and a convenience when moving furniture. Upstairs are three bedrooms, bathroom and w.c., and fitted cupboards are provided on both floors.

Each cottage has an outside annexe containing a second w.c., coal store and a general store room approached from the kitchen door by a covered passage.

Although accommodation is standard throughout, variations in elevation details give some variety. Monotony is also avoided by linking up cottages in groups of threes and twos, together with their outhouses and screen wall.

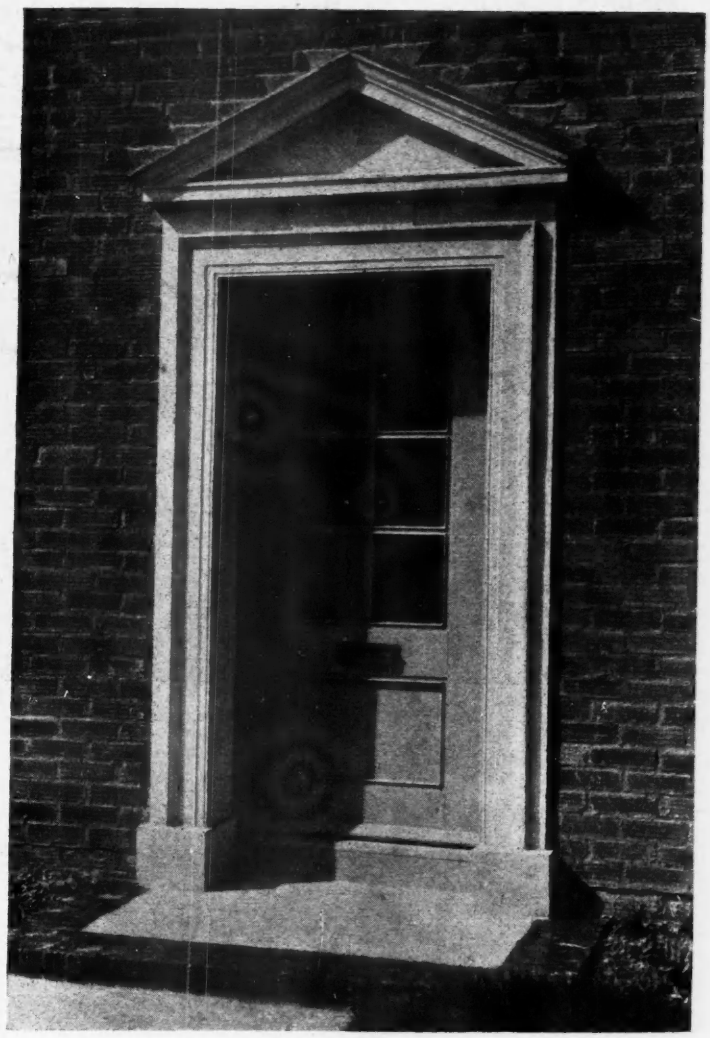
The scheme gains as a whole by the continuous garden treatment of the space between frontages and the road, without the usual dividing hedges or fencing.

The architect was Mr. Philip D. Hepworth, F.R.I.B.A.

The general contractors were Messrs. Allnatt (London), Ltd., of Park Royal-road, London, N.W.10.

Among the principal sub-contractors were: Mastic floors, The Rock Asphalte Co.; window glazing, Aygee, Ltd.; roof tiling, J. Alfred Pratt and Co. (1928), Ltd. (predecessors of Pratt (Watford), Ltd.); plastering, East Sussex Plastering Co.; painting, A. Willis; plumbing and domestic hot water, F. J. Baynes and Co., Ltd.; and electrical installations, The Weald Electric Supply Co., Ltd.

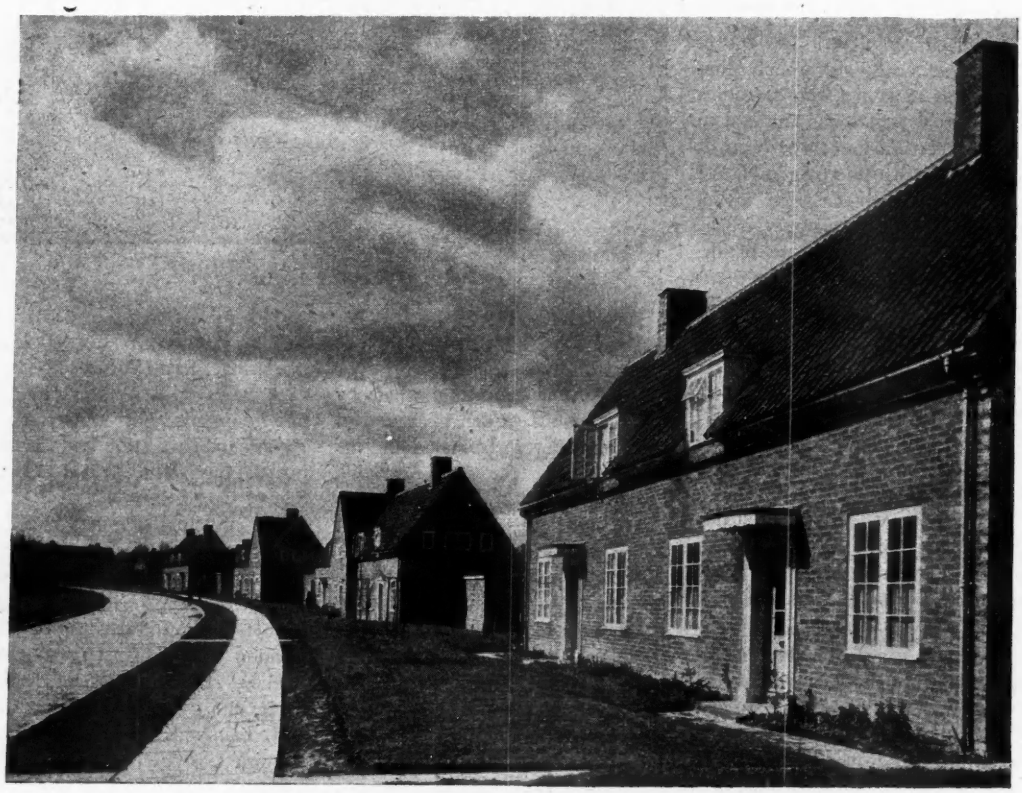
The principal suppliers included: Joinery, P. H. Barker and Sons, Ltd.; sanitary equipment, Associated Clay Industries; ironmongery, Comyn Ching and Co.; bricks, The London Brick Co. (*via* Wiggins-Sankey, Ltd.); sewage disposal plant, Burn Bros. (London), Ltd.; and paint, Keystone Paint and Varnish Co.



Detail of a front door.

Typical plans. PHILIP D. HEPWORTH, F.R.I.B.A., ARCHITECT

Houses with outhouses at rear instead of at the side.

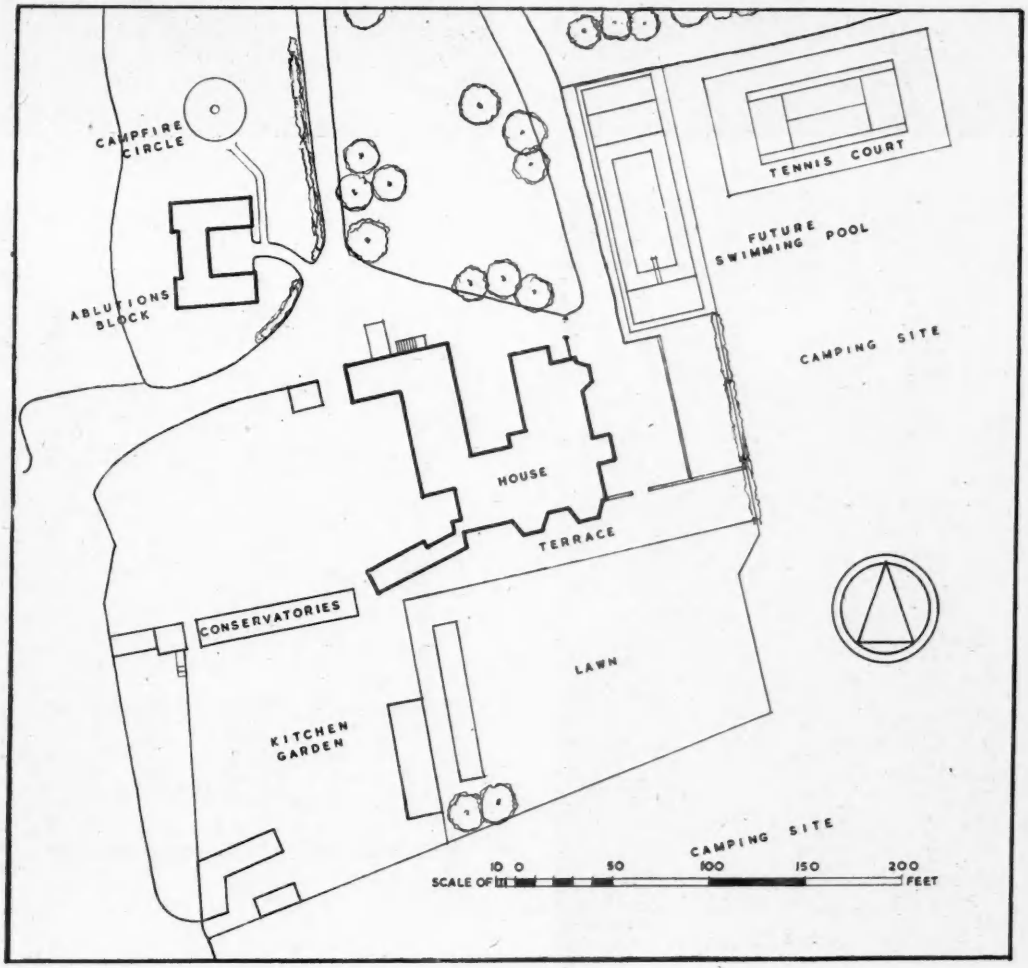


COTTAGES AT BODIAM, SUSSEX. View looking west along the new road.

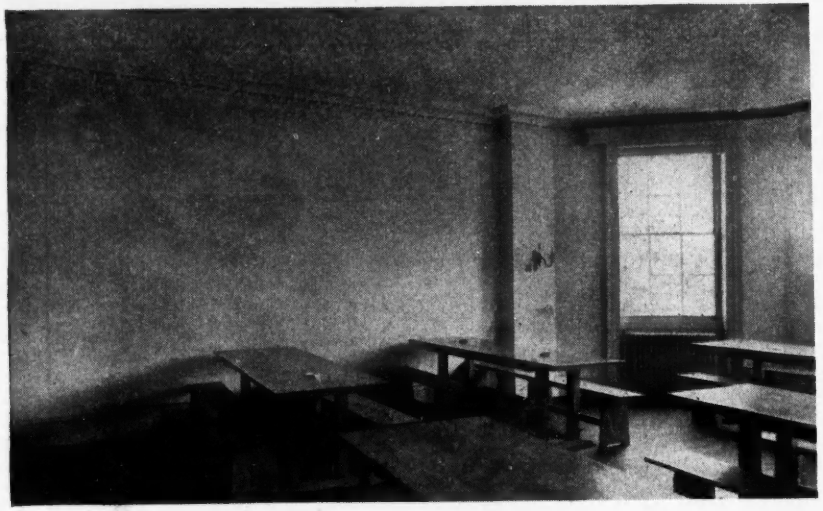
TRAINING AND CAMPING CENTRE, NASH COURT,

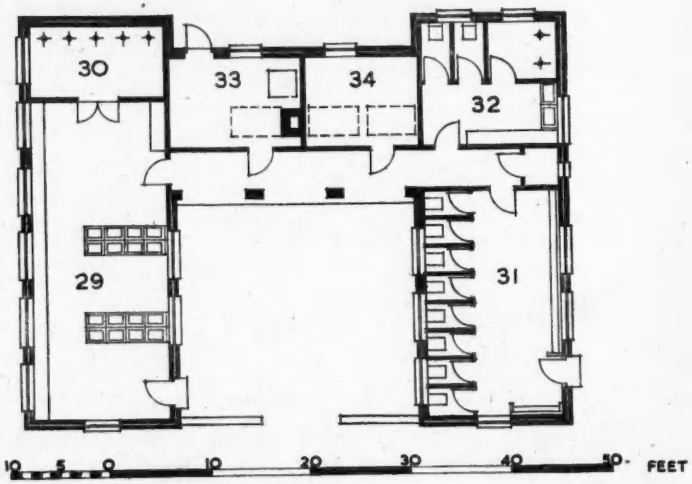
for the National Association of Boys' Clubs

LLEWELLYN SMITH AND WATERS, MM.B.E., FF.R.I.B.A., ARCHITECTS

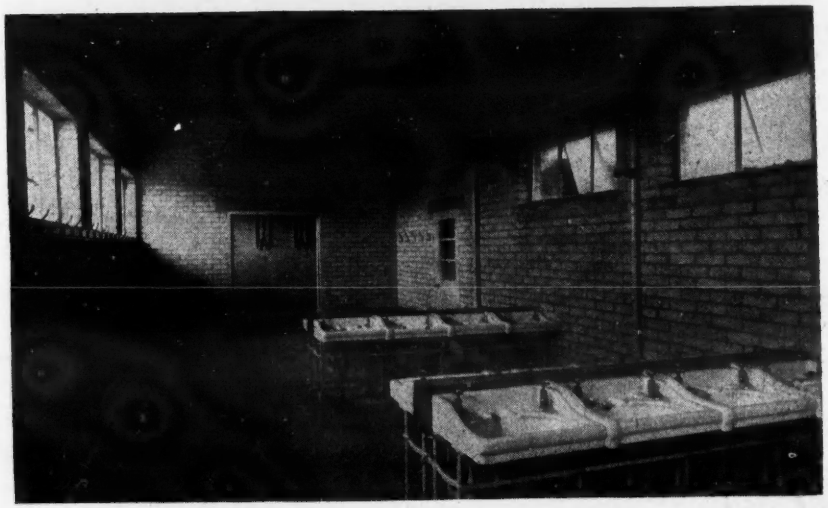


The site plan.





Plan of ablutions block. *Above*: The dining-room.



The ablutions block and (*below*) interior view.

AMONG the projects provided by the South African Aid to Britain Fund, which so far as boys' organisations are concerned has been administered by the King George's Jubilee Trust, is the National Association of Boys' Clubs' Training and Camping Centre at Nash Court, near Tenbury Wells, opened by H.R.H. The Duke of Gloucester on June 20.

Nash Court comprises an estate of about 34 acres, with an eighteenth-century house, built in brick. It was required to provide accommodation for about 30 residents in the house, in addition to the warden and the permanent staff, and camping facilities for 150 to 200 boys.

The site is on the southern slope of the Clee Hills, with an uninterrupted view of the Welsh border, in country which is ideal for walking, and with a number of places of historic and architectural interest within easy reach.

The house has lent itself well to adaptation for the purpose, the only substantial alterations required being the extension of the kitchens and the provision of sufficient sanitary accommodation. The house is, therefore, a self-contained unit for all purposes.

Adjacent to the house is an L-shaped field of some 11 acres in extent, now used for tents and as a playing field ; and there is another field of five acres which will be brought into use later.

In order to provide satisfactory sanitary accommodation for campers a new ablutions block was constructed, situated reasonably near to the house to be accessible for water supply and drainage, and in such a position that, without being unduly prominent, it is within easy access of the two fields that will be used for camping. The block is constructed with a local brick and a hand-made pantile roof, and tones in quite well with the existing house.

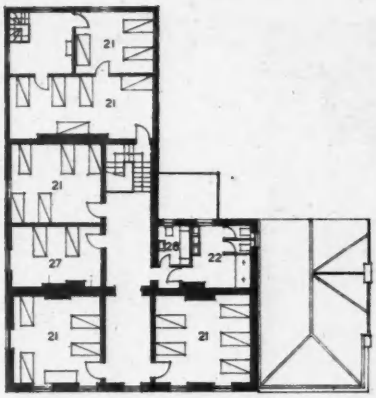
The stable block, forming part of the house, has been developed for use by the campers. It provides a dining-room immediately adjacent to the kitchen in the house, and also rooms for indoor games in wet weather.

The architects are Messrs. Llewellyn Smith and Waters, FF.R.I.B.A., and the quantity surveyor, Mr. F. Bertram Mewis, A.I.A.S., A.I.Q.S. The consultant engineer for the heating installation is Mr. R. W. Steele, M.I.H.V.E.

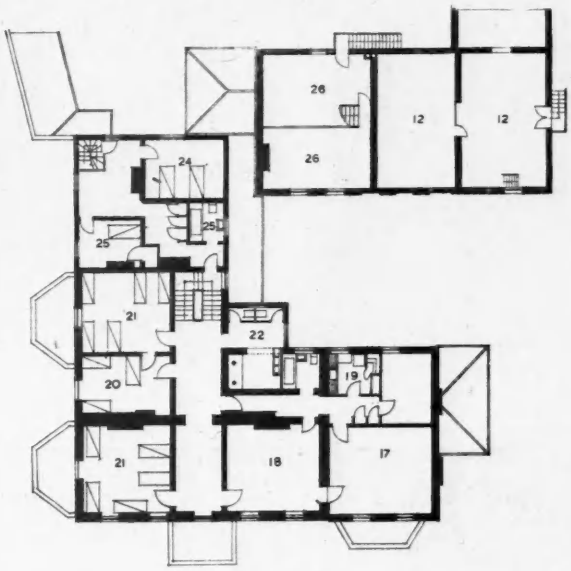
The general contractors are Messrs. Ernest Deacon, of Kington, Hereford, and the principal sub-contractors include :

Sanitary fittings, John Bolding and Sons, Ltd. ; electrical work, H. C. Wall and Co., Ltd. ; ironmongery and metal windows, James Gibbons, Ltd. ; furniture, Heal's Contracts, Ltd. ; heating installation and plumbing, general contractors; equipment for septic tank, William E. Farrer, Ltd. ; roofing, Broadbent and Stevens ; piping and galvanised fittings, Timmins and Foulkes ; sand lime bricks in ablutions block, Proctor and Lavender ; other bricks, Baggeridge Brick Co. ; and joinery, Sharpe Bros. and Knight.

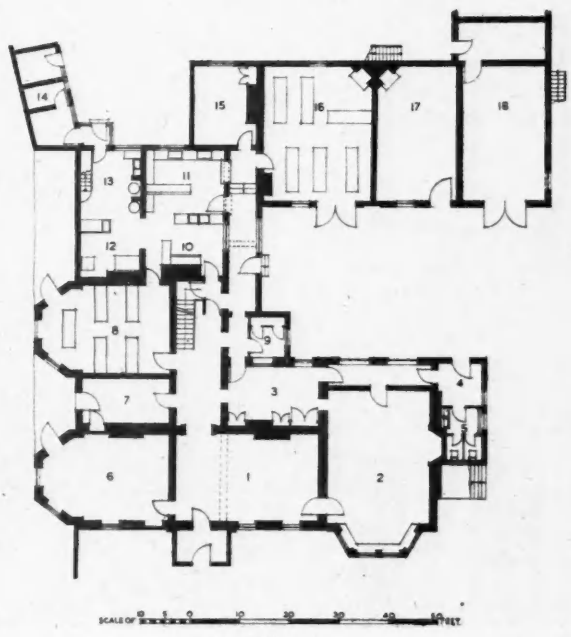
The sign (see page 829) was made by the general contractors and the figure of the springbok surmounting it was carved by Samuel Elliott and Sons (Reading), Ltd. The panel was painted by Mr. W. H. Sharpington.



Second-floor plan.



First-floor plan.



Ground-floor plan.

KEY

GROUND FLOOR
1 Lounge.
2 Assembly room.
3 Hall.
4 Boys' entrance.
5 Lavatory.
6 Groups' room.
7 Warden's office.
8 Dining-room.
9 Canteen.
10 House wash-up and servery.
11 Campers' wash-up and servery.
12 Kitchen.
13 Scullery and Preparation
14 Larders.
15 Sitting-room.
16 Campers' dining-room.
17 Campers' reading-room.
18 Garage.

UPPER FLOORS
12 Campers' games rooms.

WARDEN'S QUARTERS
17 Sitting-room.
18 Bedroom.
19 Kitchen.

BOYS' ROOMS
20-21 Dormitories.
22 Ablutions.
24-25 Domestic staff.
26 Stores.
27 Leaders' bedroom.
28 Leaders' bathroom.

The ablutions block and *(below)* interior view.

Plan of ablutions block. *Above* : The dining-room.

COMPETITION FOR PROPOSED MEMORIAL TO ROYAL NAVAL PATROL SERVICE, LOWESTOFT. WINNING DESIGN

F. H. CROSSLEY, DIP. ARCH., F.R.I.B.A., ARCHITECT. (See page 833 for Assessor's Report.)

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A.R.C.U.K.

73rd Ordinary Meeting

THE composition of the General Purposes Committee of the Board of Architectural Education for the year 1950-51 was questioned at the 73rd ordinary meeting of the Architects' Registration Council of the United Kingdom held at 66, Portland-place, on June 16. Mr. Sydney Tatchell, C.B.E., presided.

The report of the Board of Architectural Education gave the names of those appointed to the General Purposes Committee for the succeeding year and MAJOR G. B. J. ATHOE, referring to the Committee as the power behind the throne, said its members should have some regard for the interests of other architectural bodies as well as the R.I.B.A. All the names on the list, with the exception of Dr. T. J. Drakeley and Dr. G. I. Sinclair, were those of R.I.B.A. members. "I have no doubt," Major Athoe continued, "that they are all very good men. What I do suggest is that there is no representation of other architectural interests. I move 'That this Council expresses concern that the Board of Architectural Education have elected to its General Purposes Committee personnel who have no other architectural interest than one.'"

MR. KENNETH M. B. CROSS, chairman of the Board, said that the personnel of the Committee were appointed with but one consideration in mind, that of architectural education. The motion was defeated by 20 votes to five, two not voting, and the report approved.

Major Athoe thereupon reported that the Council of the Incorporated Association of Architects and Surveyors had accepted an invitation extended some time ago to hold an intermediate examination and the papers would be forwarded to the Council for its consideration.

The report of a sub-committee, appointed to consider the details of reprinting the Register in an improved form, was the subject of lengthy debate. The improved layout referred to included the addition of an extra column giving details of qualification for registration and MAJOR ATHOE proposed that this column should be deleted from the revised layout. The motion was carried.

A memorandum by the Registrar, Mr. Pembroke Wicks, as Clerk to the Discipline Committee, mentioned the high costs incurred by referring to the Discipline Committee cases in which the disgraceful conduct alleged was not so serious as to justify the removal from the Register of the architect concerned. Recommendations amending the Disciplinary Regulations so that such cases might be effectively disposed of by the Professional Purposes Committee without incurring any expense beyond the preliminary investigation were approved.

The Professional Purposes Committee reported that consideration had been given as to what amendments should be made to the Examples under Principle III of the Code to give effect to the recommendations in the report on Publication of Plans which was approved by the Council at their last meeting. The Committee's report stated: "Paragraph (a). The Committee recommend that the words [in *italics*] be added to Example (vi) of Principle III, as follows: 'Although there is no objection to an architect allowing signed illustrations and descriptions of his work to be published in the Press, no monetary consideration may be given by the architect for such insertions, *nor may he solicit such publication for the purpose of increasing his practice.*'

"Paragraph (b). The Committee have further considered the prohibition in the Code of publication of an architect's design for a permanent building unrelated to a specific programme and site as tending to lower the standard generally expected in the profession. As this is a matter which does not relate to advertisement under Principle III, and could only be dealt with by extending Principle VI of the Code, the Committee hold that the proposal should not be proceeded with. In their view it is undesirable to attempt any alteration of the Principles upon which the Code is based.

"Paragraph (c). The Committee recommend that the following Example be added to Principle III of the Code: 'An architect may permit the use of his name by a commercial firm in their advertisement of such of their products as have been included in the architect's specifications, but it would be regarded as advertising if an architect solicited the publication of his design or name in the advertisement of a commercial firm.'"

With regard to architects retained as consultants or employed on salary, the Committee reported that it had considered in what conditions an architect who was retained as consultant or employed on salary might accept commissions from clients of his employers. They recommended that a further Example be added to Principle VIII of the Code as follows: "An architect engaged as architectural consultant or adviser or as a salaried assistant should not act in a professional capacity for a third party to whom his principals owe a contractual duty save with the mutual consent of all parties and provided that he is appointed as independent architect on the direct instructions of the third party from whom he should receive direct the payment of fees. [*Note*: An architect may not share with his employers fees obtained from a client introduced by his employers.]"

The report was approved.

TOWN AND COUNTRY PLANNING

ON June 13, MR. THORNTON-KEMSLEY and other members opened a debate on the administration of the Town and Country Planning Act, 1947. They urged that the development charge of 100 per cent. should be reduced to 75 per cent., as suggested in the Uthwatt report.

In his reply, MR. DALTON, the Minister of Town and Country Planning, said that the Central Land Board had reported to him that, in their view, having a uniform and lower development charge would require legislation, while a differential would not. Whether legislation was required or not, he did not propose to vary the 100 per cent. development charge. It was not having a deterrent effect on development. At some future date when the total volume was substantially greater it might do so, but at present the labour force was fully employed.

He had tried to do something about the delays in dealing with applications for planning permission in what was called an "experiment in freedom"—a phrase which he used to local authority representatives who were doubtful whether he was not being rash in lifting this requirement. That was the context of his observation, and he made no complaint of a sentence being taken out of its context. He hoped that the withdrawal of the requirement of planning permission, as a result of which 40 per cent. of the applications previously made would no longer be necessary, would diminish delays by planning authorities.

Some Comments.

THE FOLLOWING COMMENTS on the debate are contributed by a legal correspondent:—

At the end of the debate, in which were discussed hardships arising from the administration of the Town and Country Planning Act, 1947, the Minister of Town and Country Planning announced that whether or not new legislation was required in regard to the much-criticised development charges under the Act, he did not propose to vary the present 100 per cent. charge. He said that, in his opinion, it was not having a deterrent effect on development.

Alluding to the matter of development charges and the report of the Central Land Board, he announced that, as a result of suggestions made, he proposed in the near future to lay before Parliament new Regulations to exempt certain classes of development from the liability to development charge.

The exemptions proposed were:—

(1) The enlargement of dwelling-houses by 10 per cent. or 7,500 c. ft., whichever was the greater;

(2) Rebuilding of dwelling-houses with simultaneous enlargements of similar limitations;

(3) Lateral conversion into flats of not more than three adjoining dwelling-houses if they were in existence before July 1, 1948; and

(4) War-destroyed houses entitled to a cost of works payment. He pointed out, however, that planning permission would be necessary to carry out these "lateral alterations," but, if obtained, no charge would be payable.

A further concession was the proposal to exempt from development charge the use of part of a dwelling-house for business purposes, but conditionally on their being no external change in the appearance of the building. The alteration, he said, would be that development charge would not be payable in such a case and planning permission had been granted.

He concluded by saying he was also considering that certain changes of use would not rank as development, and that certain uses at present classed as separate would cease to be so classified.

IN PARLIAMENT

Housing Cuts

ON June 13 MR. BEVINS asked the Chancellor of the Exchequer to what extent the capital cost of £35,000,000 on housing, announced by him on October 24, 1949, related to 1950, and to what extent to 1951; and whether the restoration of the cut required the balance of the capital investment programme to conform.

SIR STAFFORD CRIPPS said that when the capital cuts were announced last October it was stated that the reduction would take place as quickly as possible, but that the process would have to be gradual if dislocation of work already in progress were to be avoided. It was not expected that the reduction of £35,000,000 in the housing programme would become effective before the end of 1950. With regard to the second part of the question, the restoration of the cut would cause a small increase, the size of which it was too early to estimate, in the total investment programme for 1950; in 1951 the housing programme would be accommodated in the general investment programme with necessary adjustments elsewhere.

BUILDING IN THE TROPICS

The Design of Buildings for Comfort

DETAILED COMMENTS on some of the more important problems affecting building in the tropics, with particular reference to the design of buildings for comfort, were made by MR. G. ANTHONY ATKINSON, B.A. (Arch.), A.R.I.B.A., Colonial Liaison Officer, when he addressed a meeting of the Architectural Science Board at the R.I.B.A.

Following are extracts covering the major points dealt with in the paper.

It may be said that tropical building differs from that in a more temperate climate in four main ways:

(1) The problems of thermal comfort, and allied physical problems like those of natural lighting, are different.

(2) Building materials and equipment do not necessarily behave in the same way. They are more liable to deterioration through the action of strong sunlight, high temperatures and humidity, mould growth, insect attack, etc. There is little or no risk of frost. Generally, in the humid tropics, periods of strong sunlight alternate with torrential rain. The problems of moisture penetration are therefore likely to be different. They are certainly very different in the dry tropics.

(3) Because of the relative backwardness of social and economic development, and because of the variety in social organisation, building needs and the means by which they are satisfied, are different. Generally speaking, buildings have to be simpler and cheaper.

(4) In some parts of the tropics there are few, if any, local building material industries. Materials are made by handicraft methods, or have to be imported. There are too few technicians and skilled artisans, and local training facilities are scanty. There are also few experienced and well-equipped local contractors. In rural areas especially, builders are comparatively unskilled, or skilled only in traditional local techniques.

The relative importance of these differences depends, of course, on local circumstances. It is, obviously not possible to deal, in detail, with all the problems involved. I am, therefore, going to deal at some length with the design of buildings for comfort and then discuss more briefly a few of the other problems.

There are, of course, many kinds of tropical climate — depending on such things as latitude, proximity to the sea, altitude and seasonal winds. Again, I make no pretence to give you a comprehensive classification, but, from the standpoint of building design, we can take it that there are three basic tropical climates—the very hot and dry; the hot and humid; and the cooler, upland climate.

Typical climates from each of these groups have been plotted on Figure 1. They are, respectively, Khartoum (hot, dry), Freetown (hot, humid) and Nairobi (cooler, upland).

Design for Comfort

Without resort to air-conditioning, it is possible, through correct design, to increase substantially the comfort in a tropical building. Comfort depends on the temperature, humidity and movement of the air, and on the temperature of the surfaces to which the body is exposed. Let us look at these factors one by one. It is not usually practical to reduce humidity. Air movement depends on the design of a building and can be controlled. We cannot reduce the air temperature in a room, unless we allow the air to pass over a cool surface or be displaced by cooler air; if it passes over a hot surface, or is displaced by warmer air, its temperature will rise. Hot surfaces not only warm the air but, if they are hotter than about 93 deg. F., will also warm the body by radiation. The cooler they are below this temperature, the easier it is for the body to lose its heat and, in a warm climate, to keep comfortably cool.

First, therefore, as far as possible precautions should be taken to avoid heating up the air before it enters a room. Secondly, the inner surfaces should be as cool as possible—they should be at least as cool as the shade air temperature. These two principles apply to all tropical building, but their application, as we shall see, is very different in hot dry and hot humid climates.

The Arab might live in a house with thick walls and small openings to protect him from the heat of the day, and a flat roof on which to sleep at night. Contrast this with a building in the humid tropics. Here air movement is essential for comfort, and it is preferable to let the outside air pass through the building during the day; so openings are large and walls are often built of materials through which the air can pass—such as grass matting. In this kind of climate the daily temperature range is generally small and there is not much cooling at night, so inside surfaces cannot be reduced below the average shade temperature and there would be little advantage in making the walls thick.

Let us now look at these requirements for keeping cool in greater detail. The broad principles are known, and it is possible to say what will be the general effect of certain treatments. But we cannot yet say, with any degree of accuracy, what will be the quantitative effect of a particular form of construction on comfort conditions, although there is a certain amount of information available which can serve as a useful guide. Neither do we know very much about the relative importance of the different factors which influence the ways in which a building can be kept cool. It is, therefore, not yet possible to compare thermal efficiency with the cost of providing it, as we can do for heated buildings in cool climates. Research into these problems has been started in a number of countries.

It should be emphasised that the problem of the natural protection of a building against solar heat is completely different from that of insulating it against winter heat loss. In the latter case, the heat is obtained from an artificial source and the inside air temperature is well above that outside. Only when there is an artificial cooling source—such as air-conditioning—are the problems of summer cooling and winter heating comparable and is thermal insulation, by itself, important; for without artificial cooling it is not possible to reduce the air temperature inside a building below the minimum night air temperature outside. The problem is, therefore, one of keeping the inside temperature as near to this minimum as possible and not allowing it to rise to the maximum outside temperature in the sun.

When solar radiation falls on an opaque surface, part is reflected and part absorbed. Light colours and shiny metal surfaces reflect most radiation—white paint as much as 80 per cent. Dark

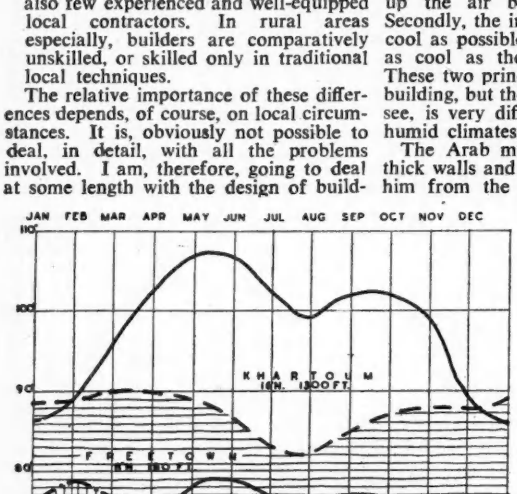


Fig. 1.

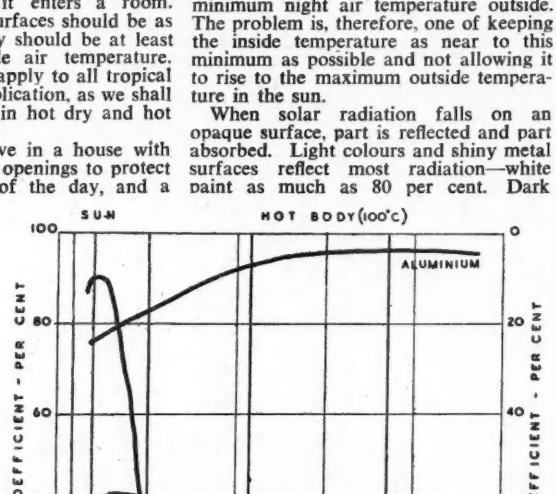


Fig. 2.

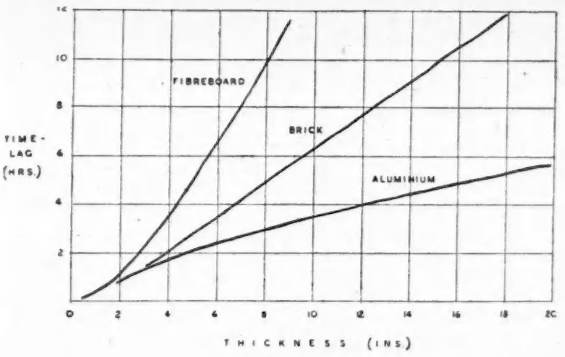
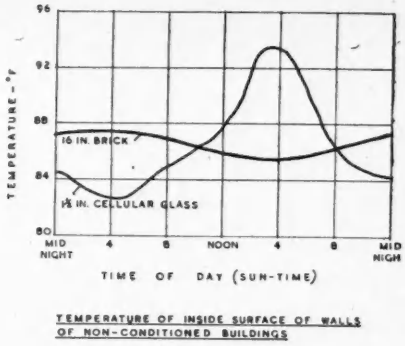


Fig. 3.



TEMPERATURE OF INSIDE SURFACE OF WALLS OF NON-CONDITIONED BUILDINGS

Fig. 4.

colours, however, reflect very little. The rest of the radiation is absorbed. It is converted to heat and the material warms up. The warmed surface emits low temperature (long wave) radiation and thus gets rid of some of the energy which it has absorbed. The rest heats up the structure. Most building materials, irrespective of colour, easily emit low temperature radiation. Shiny metal surfaces, on the other hand, do not. They, therefore, cannot re-radiate the heat so easily as can a painted surface so that, on the outside of a building, a white paint is better than shiny metal such as aluminium. On the inside, however, we do not want the material to emit its heat and a shiny metal surface is best. This was shown in a series of experiments carried out at the Building Research Station before the war. A tin-plate sheet, painted white on the outside and left shiny underneath, was found to be 100 per cent. effective. It was 86 per cent. effective when neither face was painted, but only 60 per cent. effective when the underside was painted white, and the top surface as shiny metal.

Figure 2 shows how white paint and aluminium behave with different kinds of radiation. It should be noted that, for the same wave length, good absorbers are good emitters and vice versa. So we see that we can reduce the amount of solar radiation absorbed by the walls and roof of a building by using outside surfaces of a light colour. By keeping the structure cool we shall keep the inside surfaces cool, and therefore improve comfort conditions.

As an Arab building shows, it is possible, in a hot, dry climate, by using a thick structure to ensure that inside surfaces are coolest during the heat of the day. This is because the regular succession outside of high temperatures by day and low temperatures by night constitutes a periodic temperature variation which gives rise to a corresponding variation at the inner surface of the structure. These temperature changes at the inner surface occur later in time and are smaller in amplitude than the changes which produce them. For a homogeneous structure, both the time lag and the amplitude depend on several physical properties considered jointly, namely, the thermal conductivity, density, specific heat and thickness of the material. The relationship between these quantities on the one hand, and the amplitude and time lag on the other can be determined from tables which are the result of American research.

Figure 3 shows the "time-lag" of three materials—brick, fibreboard, and aluminium, for different thicknesses. By suitable choice of materials and thicknesses we can ensure that minimum internal temperatures occur during the day and maximum internal temperatures during the night, and also that the amplitude of these changes is considerably less than the amplitude of the external variations which produce them. The actual time-lag which is required depends, of course, on the time of day the room is going to be used, and the time of day at which the outside surfaces are hottest.

Figure 4, also based on American research illustrates another example.* The walls have similar insulation values but very different thicknesses, one being a 16-in. solid brick wall and the other a 1½-in. cellular glass wall. (This last was chosen on account of its extreme lightness and high thermal resistance.) It can be seen how rapidly the inside surface warms up as the sun shines on the thinner wall—by three in the afternoon it has reached 93 deg. F. As the sun sets, however, the thin wall cools down and by mid-night the temperature has dropped to 84 deg. F. Compare this with the thicker wall. It takes a long time to warm up, so the inner surface is hottest at four in the morning. It also take a long time to cool down, so the inside is coolest at four in the afternoon. The variation in temperature is also slight—less than 3 deg. F. compared with 10 deg. F. for the thin wall. Obviously the thick wall is best for rooms used during the day and the thin wall for rooms used at night. The ideal building for a hot, dry climate, one might say, is a thick-walled mud hut for the day and a tent for the night.

Effective Shading

The object of shading, which is complementary to the use of light-coloured surfaces, is to prevent the outside of a building from absorbing the direct heat of the sun and so to keep it down to shade temperature. The most effective way of doing this is with a thin canopy or sun-shade, painted white on its upper surface. It then reflects most of the sun's heat and, also, cools down rapidly when no longer sunlit. A thick sun-shade, on the other hand, stores up the heat and so cools down more slowly. It itself produces a time-lag so that its undersurface starts to emit heat to the wall and roof surfaces which it is supposed to protect long after they would otherwise be cooling down. It also heats the cool night air passing over it on its way into the building. This, in fact, is what happened with some of the Brazilian buildings where sun-shades, or "brise-soleil," of concrete 2 or 3 in. thick, have been used to protect windows. It would have been better if they had been made of a lighter, thinner material, such as sheet metal, asbestos cement, wood or, as in the case of the office block of a new legislative assembly building in Khartoum—of split bamboo.

In order to shade walls of single-storey buildings, especially those facing north and south, wide overhanging eaves can be used. But on the east and west walls, and with many-storey buildings, other methods are necessary, such as verandahs, horizontal and vertical fins (which may or may not be adjustable) and the judicious planting of vegetation.

Roofs present a slightly different problem. Again the sunlit surface should be as light in colour as possible. Generally speaking, some kind of double roof is necessary; either the ceiling being shaded by the roof covering or the roof slab by a "parasol" treatment. The shading element should again be of thin construction and the space between it and the ceiling or roof slab well ventilated.

We have seen that the principle of shading is most important in hot, humid climates where we cannot reduce the inside air temperature below outside shade temperature. The effect of shading a thick structure is different. It will reduce the outside surface temperature during the day and will, therefore, reduce the inside surface temperature at night. But it will not, of course, affect the inside daytime temperature. Shading will be useful when the room is to be used at night as well as during the day—but it will not be as effective for night time use as a separate, thin structure.

In the tropics, sky conditions may be different from those in Great Britain, and so daylighting studies developed here may not be directly applicable. In the dry tropics, the sun is strong and the sky often cloudless—deep blue in colour, except when made hazy by dust or the smoke of bush fires. There is little vegetation and the ground is, therefore, light in colour. In the humid tropics, on the other hand, the sun is less strong and the sky often cloudy or overcast. Vegetation is luxuriant and the ground green or earth-red.

A blue sky, by itself, diffuses relatively little light; a cloudy or overcast sky, especially during the middle of the day, is much brighter. The direct sunlight is, of course, brighter still, but it is usual to prevent it from shining into a building. In the dry tropics, the light-coloured ground reflects a great deal of light and may, as a result, be nearly ten times as bright as the blue sky above. The ground and surrounding sunlit buildings are, in fact, the main light source. In the humid tropics the main source is the bright, cloudy sky. In both cases, for good lighting the same principle should be followed—to screen from direct view the bright source of light, ground or sky, and

* "Summer Comfort Factors as Influenced by Thermal Properties of Building Materials." C. O. Mackay and L. J. Wright, Jun. *Heating, Piping and Air Conditioning*, Vol. 14, No. 12, p. 750-7 (1942).

so enable the eye to adapt itself better to the general level of illumination—but its application will not be the same because one light source is the reverse of the other and because of other design requirements.

In the humid tropics the bright, cloudy sky is the principal source of light and the problem is to reduce the glare caused by the contrast between it and the comparatively dark interior of a building. The best way of doing this is to cut out the direct view of the sky, by louvres, for example, which may be adjustable.

In the dry tropics, the sunlit ground being the main source of light, it is the view of the ground which must be screened. This can be done by raising the window cill above eye level or by screening the lower part of the window. With the ground as the main source of light, the ceiling is the brightest part of the room.

For this reason ceilings are often richly coloured and decorated. It is a form of lighting capable of producing most interesting architectural effects as the Egyptians and, after them, the Arabs have shown.

Other factors which help to reduce glare are deep window reveals, large openings and cross-lighting. In the humid tropics, large openings and cross-lighting are usual, because they are also necessary for air movement and cross-ventilation. But in the dry tropics windows are traditionally small, mainly for protection against the heat. However, this is compensated to some extent by deep window reveals and by the more even diffusion of light by the ceiling, which, as we have seen, is the main source of light in the room.

Summary of Requirements

Let us sum up the requirements of building for comfort in three basic tropical climates.

In a hot dry climate, the entry of hot air from outside during the day is undesirable. For rooms used in the daytime, the walls are thick and the windows small. Windows are closed and screened to keep out the heat, and at night are opened to cool down the building. (For protection against the sun's heat, the screening element should be on the outside of any glazing.) Direct sunlight being excluded, the ground is the main source of light. To reduce glare, the view of it is cut out by screening or by window cills above eye level. For rooms used only at night a thin structure which cools down rapidly is preferable. Alternatively, if a thick structure must be used at night, the walls are best shaded by thin sunshades. Outside surfaces are light in colour and buildings face north-south so as to prevent long stretches of east or west wall being subjected to the nearly horizontal rays of the sun. The surface area exposed to the sun is kept as small as possible and benefit is obtained from mutual shading of buildings.

In a hot, humid climate the prime object of design is to provide free air movement through the building and to prevent the temperature of its inside surfaces rising above shade temperature. To obtain the greatest benefit from air movement on days when there is only a slight breeze, orientation in its prevailing direction is a first consideration. It may, at the same time, be possible to obtain protection against squalls and driving rain. Openings are large to allow as much air movement as possible. They are protected by canopies or verandahs so that they can be kept open for ventilation when it is raining. There is ventilation at ceiling level, and cills are low so as to allow the movement of air across the occupants of a room when seated or in bed. Dead-air pockets on plan, as well as in section, are eliminated, and to obtain cross ventilation, buildings are one room thick. The sky is the main source of light and, to reduce the glare caused by it when cloudy and bright, its view is screened by louvres or similar means.

Walls and roof are of thin construction, for thick construction gives little benefit during the day and is of some disadvantage at night. Both walls and ceiling are shaded, and advantage is taken of the shade provided by trees and vegetation so long as they do not restrict air movement. Sun shades and similar methods of protection are also thin, so that they do not store heat and emit it at night, and surfaces exposed to the sun are light in colour. (Provided the roof space is well ventilated, the type of roof covering and its pitch may have little effect on internal comfort.)

In an upland climate, where there is a large daily range of temperature, the time lag of a structure is useful and, when it becomes cool at night, we are glad of the heat which has been stored up during the day. At higher altitudes and during the cool season we may even require a fire. Ceiling insulation will be of use in preventing the rapid loss of heat to the sky at night. Seasonal variations make the problem of design for upland climates more difficult. Verandahs may be necessary for the more humid, wet season, together with larger opening and some form of cross ventilation. It may also be necessary to screen a bright sky from view indoors. Generally, however, the kind of buildings which we find in this climate do not differ very much from those to be found in the warmer parts of the British Isles—fairly thick walls, some ceiling insulation, moderate window openings which can be shaded, a verandah and some form of heating, usually an open fire.

Though I have been able to suggest a number of things which should be taken into account when designing buildings for hot climates, there is a lot more to be known before we can compare the relative efficiency of the various ways of keeping a building cool. This is, of course, most important when we start to think about economical building, for the sort of thing we want to know is whether the cost of an extra foot in ceiling height is worth while. Such a question can only be answered when the problem has been investigated in an organised or scientific way.

The problems fall into three groups. First, there are those concerned with climate—such as what is a suitable climate classification from the standpoint of building design. This is the province of the climatologist, but it is up to us, as architects, to pose the question and suggest the form in which the answers would be most useful.

Second, there are the problems concerned with man—such as what are the comfort zones for different types of men in different kinds of climates. Here we must seek the guidance of the physiologist, though again we can help by posing the questions and suggesting the kinds of answers which have a useful, practical application. Much research during the last war was concerned with problems of hot-climate physiology, but most of it dealt with extreme conditions when heat exhaustion and collapse are imminent. We are interested in the less clearly defined problems of comfort over long periods in ordinary tropical, or summer, conditions. In this field the most important experimental work has been carried out in the United States. It mainly relates to the problems of summer cooling by air-conditioning, but has a wider application. In Nigeria, Dr. W. S. Ladell is carrying out a programme of research for the Colonial Medical Research Committee, using both West African and acclimatised European subjects. The Australian Commonwealth Experimental Building Station is also carrying out physiological studies.

Lastly, there are the problems directly concerned with building. Except for the work in the United States on problems of summer cooling, mainly sponsored by the American Society of Heating and Ventilating Engineers and related to air-conditioned buildings,* there has, until recently, been little co-ordinated scientific research on the design of buildings for hot climates. When building research organisations were set up in Australia and South Africa a few years ago, the need for such work was apparent. It has received a great deal of attention by Mr. J. W. Drysdale, at the Australian Commonwealth Experimental Building Station, and by Dr. A. J. A. Roux, at the South African National Building Research Institute. Their experimental work is still progressing. It is mainly related to building in upland and moderately dry, hot climates, but much of it is of general application. Here in Great Britain the Building Research Station's programme of full-scale house-heating research is being extended to include a study of thermal capacity. This is primarily from the standpoint of winter heating, but should provide data for the study of summer cooling as well. Though the experimental techniques being developed here are applicable, most of the research on hot-climate building design must of course be carried out in the tropics. I myself consider that, if we want quantitative information which can be applied to low-cost tropical building, it will be necessary to carry out experiments with full-scale buildings. This would be a task of considerable magnitude, but the results so obtained would make it well worth while.

Building Needs: Housing

To-day's building needs arise out of the development of a large part of the tropics as colonies or economically dependent territories as a result of which their whole economy has changed quite rapidly during the last hundred years or so. Large centres of populations have grown up, and are still growing up, round seaports like Lagos and Kingston, Jamaica, round the mines like those of the Rhodesian "copper-belt" and round administrative and trading centres like Nairobi. As a result, the biggest building need is to provide sufficient satisfactory low-cost housing for the rapidly growing urban population and, at the same time, to improve rural conditions. Employers in many places, particularly on mines and estates, have had to house the greater part of their labour. In the past the housing was usually of the barest minimum, and no provision was made for families who remained in the country. This is now changing; standards are being raised and larger houses are being built for the families who follow their menfolk to the centre of employment. In the towns serious overcrowding has resulted from the rapid increase in population and there are a large number of casual or self-employed workers who are

* This is summarised in the current edition of the A.S.H.V.E. Guide.

unable to build or acquire decent houses of their own. They are forced to rent rooms often at inflated rents in insanitary dwellings, or to squat on unoccupied land. This has meant that most of the governments in tropical countries—certainly of the British Colonies—have had to take a direct and growing interest in low-cost housing and in the layout of their towns. Housing and planning legislation has had to be enacted, or brought up to date, and housing authorities set up. To an increasing extent housing and planning are becoming closely associated—a development which is to be welcomed, if only because one of the most important factors in housing is good layout.

Government concern in low-cost housing has led to an increased interest in space and accommodation standards. Basic minimum standards are necessary in order to safeguard public health and also to provide certain standards of privacy and comfort. The space standards adopted are, by English standards, low—for example, 40-50 sq. ft. per person is, in many cases, usual for new housing, and living rooms are used for sleeping. (This is not so serious as it may at first sound as in a warm climate one lives much more out of doors.)

Though space standards cannot, in practice, be increased very much until the overall level of overcrowding is lessened by a sufficient volume of building, much can be done to ensure that the various standards are related to each other, and to the social needs of the people. For example, standards usually specify the minimum area of rooms and a minimum ceiling height. To increase these while continuing to build one- or two-room houses would not be popular where three small rooms, giving increased privacy, might be much preferred.

Existing standards may also not be related to the climate, or to desirable comfort conditions. For example, the requirements for ventilation seem to vary very much, but are little related to the dryness or humidity of the place and do not appear to have any scientific foundation.

There is need for research into desirable standards related both to the different climates and to the different ways in which people live. Much more can also be done by good design.

Building Technique

The techniques of building in the tropics have developed from two separate origins. There are, first, the traditional local techniques handed down from one generation to the next—like those of the mud-builders of Northern Nigeria the fruits of hard experience, flavoured often with superstition. Secondly, there are the imported, mainly European, techniques which evolved under quite different circumstances, were applied to tropical building with a varying degree of understanding, and have been modified through practice—a process which continues collectively, and in the personal experience of everyone trained overseas who comes to build in the tropics. Occasionally, as in the new African housing in Zanzibar, the two techniques are to be found side by side in the same building.

Science can assist in both these developments. It can seek out the rational and useful in traditional building, and can also show more clearly the differences between building in Europe and in the tropics, thus enabling the builder to interpret his experience more intelligently. I would like to illustrate this point by talking, for a few minutes, about one of the oldest of all building materials—earth.

Wherever man farms, where the climate is at all favourable and suitable earths are to be found, there the craft of building with earth flourishes. Its principal advantage is that it uses materials already on the site. It does, however, involve quite a lot of manual work, and only provides part of the whole building—usually the walls, possibly also the floor and roof. It is, therefore, of greatest value where the means of transport are poor, unskilled labour is plentiful, and the shell of a building is still the most important part of it. For these reasons, earth building, despite the attempts to revive it, can have very limited application in Britain, but is still particularly suitable for building in many parts of the tropics.

Earth building takes on many forms. The most common is wattle-and-daub, in which a pole and brush-work frame is used to support the earth which, consequently, may be of poorish or variable quality. Other ways of building-in-place include cob, where fairly wet earth is moulded on the walls with the hands or simple tools and without shuttering, and pisé, where the earth is only just moist enough to be rammed in stout formwork by hand, or mechanically. All these methods have the disadvantage that cracking due to the shrinkage of the earth as it dries out may be serious—the risk being least with pisé. To reduce this risk, the earth is often moulded or rammed in the form of bricks or blocks. These are sun-dried so that the greater part of the shrinkage has taken place before they are built into the wall.

Generally, the strength of earth walls, when they are wet, is low, and their resistance to moisture penetration, erosion, and abrasion poor. There are a number of traditional ways of improving this. During recent years, the correct use of soil in the making of stabilised earth roads has been studied extensively, particularly in the United States. The broad principles of ramming earth, and of adding such things as cement and bitumen, to ensure maximum stability, are known. (It is of interest to note that they follow closely the traditional rules for good pisé work.) However, whereas the traditional rules give only qualitative indications, the modern approach makes quantitative tests possible.

For earth roads, a fairly elaborate testing procedure has been developed. It is, however, unlikely that such high quality rammed cement-earth work is needed for house construction. The house wall is not likely to be subjected to complete wetting and drying like a road, since it is usually protected by the eaves from most of the rain and the sun. It is also not subjected to continual intense abrasion. There is, therefore, a possible wastage if road qualities of rammed earthwork are used for house walls. This is something which can only be found out through organised research, relating laboratory tests to field trials.

One of the things which needs to be studied is whether it is better to make good quality, and possibly more expensive, blocks, or to rely on a protective finish. Hand-operated presses, costing £150-£200 each, are being used to an increasing extent to make these cement-earth blocks. I would like to know whether there is any real advantage in using a more elaborate machine, operating at a higher pressure, or, alternatively, whether an even simpler and cheaper press would make just as satisfactory a block.

U.S. PRODUCTIVITY TOUR

A Building Team Member's Conclusions

MEMBERS of the Central Area No. 1 of the London Master Builders' Association heard MR. N. S. FARROW, M.B.E., a member of the Anglo-American Productivity Team, speak at their monthly luncheon meeting on June 14 on his recent visit to the U.S.A. and the conclusions he had drawn from the tour.

Early in his address Mr. Farrow spoke of the intense concentration of American building workers while at work and quoted from a talk by Mr. Alastair Cooke, the B.B.C. commentator on American affairs, to emphasise the point that the men employed in the building trade (or, as they call it, the constructional industry) in America worked that way in order to keep their job. If they did not work like that they would not keep the job.

The quantity surveyors in the team went into facts and figures on many jobs very carefully, said Mr. Farrow, and concluded that the output of the American worker was approximately 50 per cent. greater than that of the worker in this country. They had no bonus or incentive schemes there, just a high rate of pay. A bricklayer or carpenter earned the equivalent of 13s. to 16s. an hour and an unskilled man from 7s. to 9s. an hour. The reason why they produced more in the U.S.A. was that they had a very high standard of living to maintain and, in fact, the standard of building trade workers there was higher than in other industries and therefore they were paid a higher rate of wages. They wanted to keep their jobs so that they could continue to enjoy that high standard. If they lost their job they would not be able to keep up payments on their radio, their ice-box, their house and their car

Wages and the Cost of Living.

One might think, "What is the point of having a high rate of wages if the cost of living is correspondingly high?" said Mr. Farrow. He referred to a page in the Team's report where a comparison had been made between the time it took for an operative in New York to earn certain articles and the time it took a British worker to earn the same. Mr. Farrow gave these figures:—

	New York.	London.
A small bottle of beer	2.4 mins.	30.6 mins.
A gallon of petrol ...	5.4 mins.	45.6 mins. (before the 9d. tax increase)
A pair of shoes	3.1 hrs.	15 hrs. 13 mins.

"When people say that the high rates of wages in New York are necessary because of the high cost of living, do not believe them," remarked Mr. Farrow.

Another reason why an American operative produced more was that he had an abundant supply of the best food it was possible to have. He had the benefits of a canteen, a packed luncheon, an abundance of milk, steaks and so on.

As far as this country was concerned it was wrong to think that if we sacked half the operatives we now had, the remaining workers would work twice as hard to keep their jobs. "I think most people are agreed that a policy of full employment is here to stay, irrespective of what Government is in power, but there is one thing we must impress on our operatives and that is that it is only by greater output that they will improve their lot and the lot of everybody in the country."

The trade union system was very different in the U.S.A. from that in this country. Generally speaking, the trades unions were organised in States and in the cities, but not in any overall, national organisation as in Britain. In general the unions negotiated agreements with the employers by districts. Towards April and March, when the agreements terminated, you had a sort of "silly season" where everybody was jockeying for position and trying to get the best possible terms.

All the trades unions in America were production-conscious and if a member of a trade union was sacked from more than one site owing to bad work or lack of output, he would find the greatest difficulty in getting another job in the industry. The unions negotiated as hard as they could to get the highest possible rates for the men and then it was up to the men to do a fair day's work for a fair day's pay.

Most of the unionists seemed to prefer to work for a successful contractor, because they said that only if a contractor was successful could the industry be successful and pay the highest possible rates to the men. They did not mind if a contractor made a good profit.

The Architect's Contribution.

The 50 per cent. difference in output between America and Britain was not due entirely to the men, said Mr. Farrow. There were three chief reasons. One lay in the architect's contribution. Generally speaking, the American architect was much more efficient than his British counterpart. He had to be, because in America there were no bills of quantities and every contractor paid for his work on plans and specifications. If the plans and specifications were not complete one could imagine the chaos which would result. Therefore the American architect got the plans out in the utmost detail before the job was started and not half-way through it. You could take any set of plans produced by an American architect and you would know immediately what type of lavatory basin was going into the rooms and exactly, to an eighth of an inch, where it was going to be put. It did not pay the architect to vary the plan once the job had been started.

The second reason for the big output was the contractors' organisation. The co-operation of the contractor with the architect was, generally speaking, more efficient than that in Britain. The contractor pre-planned the job in very great detail. One of the things the Team noticed particularly was the management by the main contractor of his sub-contracts, and the co-ordination of the sub-contracts was of a high standard, such as one seldom saw in this country. Not once did the Team see any cutting away or chasing. This showed that the contract was very skilfully organised.

Another thing they noticed was the protection given to the sub-contractors' work. The moment the foundations were in and the steelwork was up the sub-contractors got on with the job.

The third factor contributing to output was the availability of materials. Contractors in America could get any materials they wanted at any time of the day or night. There were no shortages or priorities at all.

If the building industry was to be efficient in this country it was absolutely essential for it to be supplied with all the materials it needed, said Mr. Farrow.

There was no rise or fall clause in the American building contracts to-day. Therefore there was a real incentive for the American contractor to go out and buy in the best possible market. That helped considerably to reduce building costs.

Team's Recommendations.

Mr. Farrow said the Team hoped that British Government Departments, local authorities and other bodies would take heed of the recommendations in its report. The Government was already helping to some extent. They had abolished the requirement to start on a job within two months and had amended the Town and Country Planning Act.

He hoped that architects would take to heart what the architects in the Team had said in the report and put their own house in order. He thought builders could help architects by getting out progress sheets of their work at a very early stage and asking for information about sub-contracts at an early date. They could also help by demanding a plan at an early stage, when the builder wanted it, and not when the architect thought the builder wanted it. He thought builders should be able to go to the architect and say: "We propose to start this contract when *we* are ready and not when anybody else is ready."

On the subject of training supervisors and foremen, Mr. Farrow compared the position of the two countries, saying that in America there was a large supply of young men technically trained in universities (which should not be compared with British universities; they were more like our technical colleges) and these youngsters were encouraged to enter commercial firms. In Britain the building industry was so complex that it might not be possible for one man to become a fully-qualified craftsman and administrator, and the time might come when the industry would want more boys coming down from the universities or technical colleges with the same spirit as the young Americans, who, after their college training, were willing to gain practical experience by starting with a builder at a low wage in order to make their way in the industry.

Mr. Farrow thought the American contractors needed much less "paper" in their administrative work than we used. The size of most of the head offices of the big contractors, too, was much smaller in proportion to the scope of the firms than in Britain. Firms doing work amounting to the equivalent of £1 million a year only required 1,600 to 1,800 super feet of space for their head offices, although they put a lot more people on the sites than we did.

Apprenticeship in U.S.

As a whole, the American building industry took the apprenticeship system very seriously. Training did not, in most cases, last as long as ours—it was from three to four years—but they were taking in boys two to three years older than we did. Mr. Farrow thought we should consider doing much the same in this country and accepting lads who were older. He uttered a warning against taking no steps to make good the wastage of labour from the industry, which would be felt very seriously in 10 to 15 years' time.

He expressed surprise that the Team had not seen a greater variety of machinery used in American building, but he noted that on every site a masonry saw was used. An appliance to which he drew special attention was the rivet gun. It was about nine inches long and in one end a charge, similar to a .22 rifle charge, was inserted, while at the other end the rivet was put in. The gun was pointed at the object to be riveted, and fired the rivet into concrete, brickwork or timber. He hoped it would be seen in Britain before long.

All the bigger contractors used a large jib crane on the site, having 100 feet jibs with extensions of 20 to 30 feet.

"I think it is the job of the builder and contractor to educate the operatives to use these appliances," said Mr. Farrow. "It is up to us to show our operatives that by using them they can speed up operations and help themselves. The American operative's attitude is that anything that takes the hard work out of his job is all right by him."

In conclusion, Mr. Farrow appealed to his fellow builders to do everything possible to reduce costs. "If we get more and more expensive we shall run ourselves out of a job," he declared. "In England we are inclined to ask how much we can get for a particular job. In the U.S.A. they would be inclined to say 'How low can we build it for?'"

IMPORTS AND EXPORTS

Figures for May

THE President of the Board of Trade announced in Parliament on June 15 that the provisional value of United Kingdom exports in May was £183.0 million. This was only £1.4 million less than the record figure for March.

Imports at £228.8 million were higher than in any previous month, partly as a result of seasonal influences, bringing imports in the first five months of the year to a level of 14 per cent. above the same period last year.

Exports to North America.

The provisional value of United Kingdom exports to Canada in May was £12.4 million, and to the United States £8.2 million.

The daily rate of exports to Canada continued the improvement which began last October, the May rate being 23 per cent. above that for April. The United States dollar value of May exports to Canada was the highest monthly figure yet achieved in the export drive, but, despite the high May total, the average value in dollars for the first five months of this year ($26.3 m.) did not quite reach the dollar average for the first quarter of 1949 ($26.7 m.).

The daily rate of exports to the United States recovered sharply from the low April figure, the May rate being 30 per cent. higher.

Iron and steel exports in the first quarter of this year amounted to £147,000, an increase of £8,000 over the last quarter of 1949, which was the best period of that year. Exports of pottery, glass, abrasives, etc., for the first quarter of this year reached £143,000 in value, the highest for a year. The figures for the export of non-ferrous metals, etc., have, however, fallen from £157,000 in the first quarter of 1949 to £123,000 in the first period of the present year.

An upward trend is shown in the figures in respect of hardware, implements and instruments, etc.; the £124,000 worth exported in the first quarter of this year represents the greatest volume since the corresponding period in 1949, when the figure was £127,000. The amount of exports of electrical goods and apparatus in the quarter just ended also shows an improvement on the two previous quarters.

NEW COUNCIL OF BUILDERS' FOREMEN

Sir Thomas Bennett's Talk

TO mark the inauguration of the London Regional Council of Builders' Foremen and Clerks of Works which has been formed to co-ordinate the work of the London Association of Builders' Foremen and Clerks of Works, the London Builders' Foremen's Association and the Provident Institution of Builders' Foremen and Clerks of Works, the presidents of the R.I.B.A. and the L.M.B.A. gave a reception at the R.I.B.A. on June 12.

Welcoming the guests, who numbered some 380, MR. MICHAEL WATERHOUSE, P.R.I.B.A., who presided, expressed the satisfaction of the architects at the creation of the new council, which, he said, in association with the L.M.B.A., could do much to help solve the problems with which the building industry was faced.

MR. R. R. COSTAIN, president, L.M.B.A., assured members of the new council that they had the full support of his Association.

MR. G. T. WINSTANLEY, chairman of the newly-formed council, thanked both Mr. Waterhouse and Mr. Costain for their encouraging remarks.

The L.M.B.A., which has played a considerable part in bringing the three organisations together, was well represented at the meeting. Among those present, in addition to members of the administrative committee and council, were two of the vice-presidents, Mr. W. H. Gough-Cooper and Mr. D. E. Woodbine-Parish, the director, Mr. G. H. A. Hughes and the secretary, Mr. R. E. Stenning.

Sir Thomas Bennett's Address

After the reception, SIR THOMAS BENNETT, C.B.E., F.R.I.B.A., gave an address on "General Foremen and Clerks of Works—The Importance to the Building Industry of their Dual Function." The following extracts are taken from Sir Thomas's address :—

Formerly the building industry carried out its large projects primarily for wealthy organisations or individuals who demanded buildings of the highest character from the point of view of architecture, design and craftsmanship. Emphasis was placed upon a high grade of craftsmanship and resulted in the selection of foremen and clerks of works for their craft knowledge and skill. In general, the foreman personified the highest level of craftsmanship on the site. To this high standard of skill he added administrative capacity, and devoted his energies primarily to securing a fine result rather than a result in a short time or for the smallest possible cost.

The present fundamental change of emphasis is due to the fact that to-day the aim of the nation is to produce buildings efficiently for the largest possible number of people. A very high proportion of the work of the industry is directed towards projects of universal requirement, such as houses, schools, and their subsidiary buildings.

The emphasis of the work of the general foreman and agent has therefore changed from that of high priority given to craftsmanship to that of a high priority on economics in all its forms. This, in turn, has altered the outlook of the general foreman on the kind of training that he should receive and of most of his day-to-day duties.

To-day, not only has the foreman to supervise an ever-increasing amount of work which is subject to severe limitations of time and cost, but he has to supervise a very large number of different organisations, all needing co-ordination to secure the desired result.

Conditions of Employment.

The circumstance that there is full employment tends to make operatives independent, and the severe driving force of unemployment, loss of work and varying degrees of disability which became reflected in the home of the workmen in a previous generation, have been fundamentally altered. No longer has the foreman, therefore, the power of controlling his men by the threat of this disability, but he has to handle his labour in such a way that its sense of security does not lull it into inactivity, inefficient output and all the other evils which are attendant upon any type of complacency. Unfortunately, education has not yet shown many men that they are personal sufferers from inefficiency.

As the buildings of the country have tried more and more to fulfil the needs of the public as a whole instead of some specialised section, the importance of management has become more and more apparent, and this clearly applies to every branch of the building industry from the smallest jobbing contractor to the largest works of building and civil engineering. The task of supervision is achieving greater and greater importance; it is requiring more personnel, and personnel of a much higher calibre and training.

It is perfectly clear that craftsmanship, while possibly holding a position of less prominence, must have a position of very great importance and can never lose it. Indeed, in some of the highest classes of building, the demand is still for the very highest class of craftsmanship.

In the end it is the foreman who decides the precise way in which the craftsman must proceed to obtain a better result. Therefore, it is still necessary for the general foreman to have this close contact with craftsmanship which was formerly his major, and in some cases his only, qualification.

Supervision of Men.

There is no doubt that, at least, on the larger type of contract, the foreman tends to be separated further from his men than he was in the case of the smaller contract occupying a longer length of time, and his other duties tend to confine him much more to his office and less to the work than, indeed, he would like. In these circumstances he must learn to manage labour although it is more remote.

It may well be true that no one can impart the quality of leadership, nor can anyone teach another the peculiar quality of inspiring men, holding them together, making them work. Nevertheless the fact remains that some part of this ability can be studied, if not acquired.

Overshadowing these factors of craftsmanship and personnel management is the question of organisation. Organisation, in its simplest terms, merely means bringing together all the factors in the contract in an efficient manner. As applied to building in practice, it varies very substantially.

Far greater foresight, much more accurate measurements, greater ability to order without actually seeing the work uncovered is a necessity of modern management. On the larger contract elaborate arrangements are necessary. In the first instance no building contract should be started unless there are complete drawings, complete specification and full list of sub-contractors all waiting to be appointed. This is becoming an accepted axiom of large building, but is still far from being universal practice, and it is of the greatest importance to the industry that we should reach a stage at which no building is started unless this full information is available.

Building Time Schedules.

Another point which the building industry has to learn is the absolutely essential need for keeping time once any section has been allotted its place in the building programme. In the past so many buildings have been late, so many times schedules have fallen to pieces, that there is a tendency to say that, although a time has been agreed to, it will never be kept and there is no need to attempt to keep it. Fitting in to a proper time is by no means an easy task, and a great measure of success of contracts and their smooth running is due to the skill of the building foreman or agent.

These are some of the qualities which are necessary in the successful general foreman. They are a formidable list of qualifications. They require the background of a first-class education, the development of an agile brain, a great deal of practical experience, a knowledge of men—a combination of qualities which perhaps few will fully attain.

The Clerk of Works.

In the days of pure craft building, the general foreman was primarily responsible for setting and obtaining a high standard of work, and the clerk of works was primarily engaged to see that that standard was there when the building was finished. To-day, the qualifications are, I think, not so near to each other. I have indicated the high proportion of time which the general foreman should spend on organisation, administration and the study of personnel. The clerk of works has less need for these qualities than the general foreman, but he needs other items of knowledge and skill if he is successfully to supervise modern building.

Many other fields of science have impinged on building in recent years. We have seen the steady growth of heating, ventilation, electricity and acoustics. The plumbing is less simple than it used to be, and a very large number of buildings necessitate the use of the steel frame or of reinforced concrete. All of these sections of the work require a high degree of technical training and technical skill.

The clerk of works must have some appreciable knowledge of the science underlying the design of reinforced concrete and of steel, of the heating and ventilating schemes, the application of electricity and similar scientific adjuncts of building. He cannot entirely escape his share in the organisation which is a necessary part of all building work to-day.

With a large army of sub-contractors employed on a large contract, he must keep an eye upon the appearance of the sub-contractor at a site meeting at the proper time. He must advise his employer or his architect or engineer if it appears that sub-contracts are not let at a period which will allow the necessary co-ordination to take place, and it is part of his duty to inform the responsible authorities if he considers that one

section of the work is falling behind its proper place in the programme, or if a number of men at work on the site are in his view insufficient to maintain the time.

These, as I see them, are the general background qualities which constitute a good clerk of works in the modern building industry. Unless he has this type of education and equipment, unless the universities and technical schools provide the type of courses which he can attend, unless his education is of a very much higher standard than was ever formerly thought necessary, then he will fail to be a good clerk of works.

"REORGANISE THE BUILDING INDUSTRY"

Sir Luke Fawcett's Address

THE need for the planned organisation and fashioning of the building industry itself as a preliminary move towards the introduction of pre-planning methods throughout the industry was stressed by SIR LUKE FAWCETT, president, N.F.B.T.O., in his address delivered at the annual conference of the Federation which opened in Ayr on June 20.

Describing building as a social service of fundamental necessity, he said it should be efficiently organised and carried on as a social service. He continued:—

How can that be done? Can it be done by private enterprise now? Take stock of the industry with its 125,000 firms of all sorts and sizes, each pursuing its casually evaluated profit-making in competition with the rest, eagerly grasping for contracts, only able to build in accordance with their random equipment. And among them the price rings, and back of them the building material manufacturers with their price rings. The dominant motive with them all is the highest money they can make. How can an industry owned, controlled, organised and used in this way ever become a social service? The plain answer is: Never.

To ensure the public ownership of the vastly ramifying building industry is a complicated business. Nevertheless, it must be done if it is directly to serve the people, and not be the disordered hunting ground of anti-social groups and interests.

In accusing employers of opposing full employment, Sir Luke said:—

They want a reserve army of labour. They want a pool of unemployed to draw upon whenever it suits their interests. They want to be able to pick and choose the men they engage, and to select the ablest and cast the others aside. They want keen competition for jobs, and to pit the unemployed against the employed, so as to lower wages and intensify exploitation. In other words, they want the restoration of the old hunger whip. It is as plain as a pikestaff, to anybody who has read their statements and followed their policy. The very essence of the clamour of building employers against "controls" is in this respect. They have been, and are, vociferous in proclaiming that full employment is the root cause of the decline in industrial morale, and that what is needed to increase production and lower costs is a high percentage of unemployed.

Their conception of a building industry reared on the labour of hunger-driven workers, harassed by unemployment and working in the nightmare of having the spectre of unemployment always at their elbows, is the lowest conceivable. It demonstrates their callous attitude towards those who produce their profits, their lack of social responsibility and, above all, their miserable, completely abandoned, idea of and attitude towards the industry and the worthiness of its construction.

NATIONALISATION OF THE BUILDING INDUSTRY

An N.F.B.T.O. Memorandum

ACTING under direction of last year's Annual Conference, the Executive Committee of the National Federation of Building Trades Operatives presented a scheme for the nationalisation of the building industry to the 33rd Annual Conference in Ayr on June 20-22. Following is a summary of the main points:—

Introduction

The building and civil engineering industries are a vast agglomeration of men amounting to about a million and a quarter. In considering the scope of the building industry we think it necessary to take in the civil engineering industry, as official classification couples them. So we think it impracticable to separate the two elements of what is really one industry. . . . The group of building and contracting includes also electric wiring and contracting. It is a point for argument whether the latter should be included. Our view is that it should, for the equipment of a building with electrical apparatus is as much a section of the building as its equipment with gas and plumbing apparatus. Thus, the building industry in the comprehensive sense connoted in the scheme, embraces 1,300,000 persons, nearly all males. Of these, a million are classified as building workers and 300,000 as civil engineering workers.

The Problem

When we come to consider the detailed analysis of the industry we draw on figures supplied by the Ministry of Works, which gives a total of 963,600 (that is, excluding all occupations ancillary to building and civil engineering, such as the administrative and clerical staffs). The M.o.W. total excludes also firms who made no returns; and this would mainly account for the difference of nearly a quarter of a million between the totals of the two Ministries.

The building industry is unique among the major industries of the country in that there is one employer for about every eight men—a dispersion of personnel unknown, as far as we are aware, in any of the other big industries. The "no-man" firms (50,000 of them) may be mainly building workers working on their own account, but they are registered as "firms," and must therefore be so regarded for the purpose of planning the industry.

Employing these 963,600 operatives are 122,800 firms, of which 106,700 firms (except the 50,000 referred to) each employ up to and including ten operatives. So there are just over 16,000 firms employing the rest, i.e., 11 operatives and over. The large and very large firms, each employing 500 operatives and over, number only 126. By far the greatest number of operatives of any group are employed by firms in the category of 100-499. Our complete analysis shows small, very small and "no-man" firms to the number of 106,700 employing 193,400 operatives; the medium size firms (14,800 of them, each employing from 11-99 men) covering 404,000 operatives; and the large and very large firms taking in the rest, 366,000 men. Of this last group, 1,122 firms, each employing from 100-499 men, account for 209,000 operatives; 76, each embracing from 500-999 men, account for 51,500; 47, each covering from 1,000-4,999, account for 83,700 operatives; while three firms only, each covering 5,000 men or over, account for 21,700 operatives. The small firms (none of which would, of course, be in the civil engineering category) have no financial significance. It is highly probably that the whole of the 121,000-odd firms in the first eight groups of the Ministry of Works table have not together the capital resources of any one of the 50 firms in the last two groups.

Some Preliminary and Consequential Considerations

Our view is that a prerequisite for nationalising the industry is the nationalisation of building materials and of merchandising, for it seems to us a useless procedure for the State to take over the handling of materials so vital to an industry if the manufacture and distribution of those materials remain in private hands. The handling of materials and their construction into buildings are but a link—the final link—in the chain of a complete job. The Labour Government has undertaken to nationalise the production of cement; and other building materials (insulated electric wires and cables, rainwater goods, soil goods and castings) are to be made the subject of inquiry by a Monopolies Commission appointed under the relevant Act. So far, so good. Most, if not all, building materials manufacturers form monopolies, and it should not prove difficult to transfer these monopolies to public ownership. Bricks, paint, timber, wallpaper, electrical apparatus and equipment, metals, are all amenable to public ownership; and it should be no more difficult to devise compensation arrangements, by means of Government bonds redeemable in, say, 20 years, than in the case of any other security, such as banking, railway and mining shares. So the first step in the sequence of nationalising the building industry lies in the conversion of the manufacture of building materials into a State concern. There would seem to be no need for separate departments to be instituted for the control of manufacture. The National Building Corporation, to which we make reference later in this memorandum, would have a section concerned solely with the manufacture of all building materials and with the purchase of such raw materials whose origin does not reside in this country—such as timber and linseed oil. Another section of the Corporation would concern itself solely with the distribution of the materials on a scale and in a manner dictated by the necessary circumstances, in accordance with the overall plan of construction.

There are two essential points to be borne in mind in dealing with nationalisation: (i) the general principles governing the plan; and (ii) the form the plan is to take.

General Principles

We think the essence of a successful scheme (and by "successful" we mean also success in publicly clarifying the terms and in getting a large measure of agreement on them) lies in its simplicity. . . . The State should, we think, concern itself with large-scale operations, for we question the efficacy of its intervention on the "odds and ends" of small decorative and repair work. If the State were to take this over it would have either to (a) nationalise every little ironmongery and similar shop and undertaker (as exists in the countryside) which does small repair work and odd jobs, or (b) forbid such work from being done except by the nationalised concern. Either of these

alternatives appears to us as inexpedient and unnecessary.

The Plan

The nationalisation of all building operations on the basis of either (i) the number of men employed by any concern; or (ii) the amount of annual turnover. It might be possible to combine (i) and (ii), but we do not think it would be easy to do this. On the first basis, we suggest all firms each employing over 20 men (the average number employed in any week calculated over the period of a year) be included in the scheme. On the second basis, we suggest an annual turnover of £10,000 calculated as an average of five years immediately preceding the "vesting" date announced in the Act. The turnover of £10,000 would include the cost of materials, wages, salaries and overheads.

The acceptance of the first basis would exclude about 114,000 firms employing approximately, 293,000 men, leaving roughly 9,000 firms, each employing over 20 men, covering 670,000 operatives. In the course of time we think the excluded men would be absorbed into the nationalised service, perhaps through or by the Mobile Labour Force of the Ministry of Works. We would exclude also direct labour departments of local authorities, etc.

The Means

There could be alternative arrangements, but we favour the following: The establishment of a Ministry of Building, to take the place of the present Ministry of Works. It does not seem necessary to us that the Ministry of Works should continue as a separate body if the Government establishes a Ministry of Building, which it will have to do (or convert the Ministry of Works into a Ministry of Building) if the industry is nationalised. The taking over of 9,000 firms and the control of 700,000 workers are probably beyond the scope of the Ministry of Works as it is at present constituted.

One result of the formation of the Ministry of Building, following the nationalisation of the industry, would be to abolish the whole present system of licensing and controls, for clearly the new Ministry would be an authoritative body capable of determining its own administrative actions. It might be necessary to retain a small measure of licensing (though we doubt it) for the small, remaining independent concerns.

The Ministry of Building would be the executant or determining authority but it would be necessary to relegate administration to a body concerned with the immediate day-to-day tasks that fall on the industry. So a National Building Corporation would be set up, representative of the Ministry and for the time being of all sides of the present industry—building employers, operatives, the professions (architects, surveyors, engineers), manufacturers and distributing agencies. The administration would be decentralised as far as possible into regional—and perhaps local—units; and any overall plan of construction (made at intervals of anything from one to five years) would be based on regional and local reports, whose purpose would be to estimate the needs of their own respective areas.

It would be the Ministry's job to decide matters of high policy in pursuit of parliamentary direction, and it would be the task of the Corporation to implement Government policy. It is not the essence of nationalisation that there should be a Ministry of Building as well as a Building Corporation, but we think it advisable that such a Ministry should be formed so that there can be one authoritative body responsible for the industry. The Corporation itself would be the experts, that is, those with experience of the industry and with practical and theoretical knowledge of it.

Alternative Schemes

There are, of course, alternatives to our suggested plan. If it is felt that there should be no new or substitute Government department, such as the Ministry of Building, the present Ministry of Works could set up the National Building Corporation (and, if thought desirable, a Building Finance Corporation as a separate legal entity to deal entirely with financial matters, for it has to be appreciated that the industry covers operations from £600 m. to £1,000 m. annually), in whose hands would reside full responsibility for policy and administration. An alternative we have in mind, in place of the immediate and full taking over of firms, is that when the N.B.C. is constituted it shall be the body to which all building firms would be compelled to be under contract. No question of tender would arise, for firms thus placed would be in the relation of normal employees to employers.

All firms covered by the Nationalisation Act would carry on as usual, but their sole client would be the N.B.C. The operatives would continue their work at first without noticeable change, but in the flux of time their conditions would materially improve, especially by the complete abolition of casualisation and by the resultant introduction of a guaranteed full week.

Contractual Arrangements

In the event of the establishment of temporary, normal, contractual relations between the N.B.C. and a firm, through the medium of one of the existing forms of contract (there are at least half a dozen kinds), the profit basis would continue; that is, simply put, a profit would be made on the contract. But—this is important—the firm would only receive the *cost* price (labour, materials, administration and overheads), while the profit normally calculated to result would come into the possession of the N.B.C. and be used as a fund to be drawn upon for the payment of compensation to shareholders whose concerns have been or will be nationalised.

Exceptions

It will be noted that we suggest the exclusion of direct labour departments of local authorities from nationalisation. As such workers are already working for public enterprise we see no good reason for disturbing them, unless the employing body asks that they be taken over. If it is the desire of local authorities to associate their direct labour departments with the N.B.C., the merger can be arranged through regional and local machinery which the Corporation may have to set up. We have indicated the necessity of decentralising the administration of the N.B.C.—possibly by the establishment of Regional and Local Building Corporations; and this arrangement should provide local authorities with the opportunity to transfer their direct labour or merge it with the Regional and Local Building Corporations.

We think, too, that the permanent building maintenance departments of private concerns should remain undisturbed, such as the departments of I.C.I., Courtaulds, Ltd., etc. . . . Nationalisation is of industry, not occupation. . . . By the same token the permanent maintenance men of the C.W.S. and other Co-operative Societies would be excluded.

The Professions

How would the professions stand in relation to a nationalised building industry? The architects, surveyors, technicians, engineers, etc.? In so far as they are independent and not in the sole employment of a building or civil engineering firm (we may aptly mention here that many large firms undertake both building and civil engineering work, which constitutes a further reason for the difficulty in attempting to form a line of demarcation for the purpose of nationalisation) they would be in no different position from now. As independent persons and concerns they would have the same right to work (or not work) for the N.B.C. as they have now to work or not work for a firm, but with no more guarantee. In course of time they would, if they desired, be taken into the direct employment of the N.B.C. So with the doctors. They have not been taken over by the State, though (if they wish) they work for the State and get paid by it.

The Land

We think it right to say that we are not too happy about nationalising the building industry while leaving the land in private hands. Land is, after all, the basis of all building (indeed, it is the basis of existence), and we regard its nationalisation as having a prior claim. How can the State plan its physical reconstruction if land remains in private ownership, giving the owner the last word whether or not his land may be used? True, various Acts (*e.g.*, Town and Country Planning; New Towns) give the Government and local authorities certain compulsory requisition powers, but we nevertheless regard the common ownership of land as essential to the success of the nationalisation of the building industry.

The report is signed by Sir Luke Fawcett, President; S. D. McKelvey, Vice-President; H. J. Adams, J. Armstrong, W. Cotter, T. McMenemy, J. H. Mills, A. H. Telling and J. Whittaker, Executive Committee; and by R. Coppock, Secretary.

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INTERNAL CONCRETE MIXES

A NEW Ministry of Works Advisory Leaflet (No. 9), "Plaster Mixes for Inside Work," gives practical guidance for choosing a suitable combination of undercoat and finishing coat for different types of background and different classes of finish. The working properties of various plasters are described and also the factors which affect the choice of finishing coats, such as damp, time of drying, hardness, etc.

Tables, designed for easy reference, show the "order of hardness" of various finishing coats; the number of coats advisable for different types of background; and suitable finishing coats and undercoats for brickwork and building blocks, concrete and concrete blocks, wood laths, metal lathing, gypsum plasterboard and fibre building board, and wood wool slabs.

Like previous leaflets in this series, No. 9 has been designed mainly to meet the needs of the small builder, clerk of works, foreman, craftsman and student. The Advisory Leaflets supply, in convenient form, practical information about the results of research and the latest developments in building practice. Copies of the new leaflet and back copies dealing with other subjects are obtainable from H.M. Stationery Office or through booksellers, price 2d. each.

FALLING UNION MEMBERSHIP

N.F.B.T.O. Presidential Address

IN his presidential address at the recently held conference at Bournemouth of the N.F.B.T.O. (Composite Section), MR. ARTHUR E. DAVIS, referring to the fall in membership in the union, said the downward trend had continued during the past year.

There were to-day, he continued, as many men engaged—in full employment—in the industry as there were in 1939, and by some means those who were not at present in a union had to be made to realise that they had some responsibility in maintaining the organisation which had been the means of securing the improved conditions that they enjoyed. Men outside their ranks had to be told that those improvements had not come about as a result of the generosity of their employers, and that they were under a moral obligation to play their part in the trade union movement.

He appreciated that that was a difficult task. He knew the attitude of the men who obtained the benefits of organisation without paying anything for it. It was a heart-breaking job to get those men into the movement, but it was one that had to be done.

Grading Procedure.

Speaking on the grading procedure, he said it was looked upon as an important part of their negotiating machinery so long as it produced results, but the failure to secure any major adjustments at the last review had brought a whole spate of resolutions from branches calling for a uniform rate for all districts and for the abolition of the grading system. "I would ask you to look back twenty years, and to take note of the fact that about a dozen different grades then operated, representing a margin of nearly 6d. an hour between grade A and the lowest paid district. To-day, largely as a result of the machinery which many are now prepared to condemn, that difference has been narrowed to 1½d. an hour; in most districts the margin is only 1d. Another point to bear in mind is the fact that 85 per cent. of the building trade personnel in this country enjoy grade A rate or above. That is very significant."

The question of incentives was another topic on which members held rather strong views. Being employed mainly on small jobs, or on maintenance work, they had never yet been able to earn a bonus of any description, and they felt they were denied an advantage accruing to operatives in the larger towns.

A good deal of dissatisfaction had existed for a long time, said Mr. Davis, over the inadequacy of the amount which the operative got when he drew his annual holiday credits. During the week when he took a holiday, he actually received less than his normal weekly wage. The Federation was committed to secure a measure of relief by the increase in the value of the weekly stamp, and when this had been accomplished the value of the credits would be brought more into line with the size of the weekly wage packet.

PRIVATE HOUSE BUILDING

Issue of Licences

IT was wrong to think that the increased ratio of 4:1 instead of 9:1 for houses for owner-occupation would not operate until 1951, said MR. ROBERT O. LLOYD, O.B.E., president, N.F.B.T.E., in a speech at Scarborough on June 16.

Immediately after receiving notifications of their allocation of houses for 1951, local authorities could, if they so decided, issue licences for the building of such houses up to one-fifth of their allocations. Mr. Lloyd went on to point out that powers had been given to local authorities to issue licences by mutual agreement for building in other local authorities' areas. These licences would be issued by the local authority in whose district the house was to be built and charged against the quota of the authority in which the applicant then lived.

INQUIRY BUREAU

Window Frame Construction

Q.—Our house faces south and overlooks the River Humber. It is exposed to high winds and weather and the wooden window frames are deteriorating. We propose fitting metal windows. The problem is, which will weather better (a) metal windows set in brick; or (b) metal windows set in a wooden frame?

FERRIBY.

A.—In the case of a building exposed to high winds and facing the sea I think the second suggestion is the better. In my opinion it gives greater rigidity and is a more satisfactory job. The frame should be of hardwood, preferably oak or teak, and should be fixed to the brickwork with galvanised iron cramps and bedded in mastic. The frame should be grooved on this edge and also on the front face, the latter being covered by the application of a Portland cement and sand screed. The wooden frame will also have to be rebated on the inner edge to take the metal casement and to prevent moisture penetrating between the wooden and metal frames; the latter should be bedded in mastic. This will make a watertight job.

With regard to the cill, which should also be of hardwood, the edge should be rounded and a throating ¾ in. wide and at least half an inch deep should be cut about three quarters of an inch back from the face on the underside of the cill. Provision should also be made for a galvanised water bar to be let into the underside of the cill and bedded in red lead putty and the other edge of the bar buried in Portland cement screed.

G. W. H.

Responsibility for Curbs

Q.—We are having trouble in obtaining final settlement for a preparation of site contract. The R.C. concrete curbs were *specified* to be obtained from a monumental firm or other approved; we obtained them from the firm mentioned, and the curbs have proved defective and we have denied liability to replace; what is the position? "ANNOYED."

A.—A legal correspondent writes: From the information I have, and assuming there was no warranty given by the contractor in regard to the curbs, I am of the opinion that there is no liability on your correspondent's company for them. The firm supplying the curbs (from my information) appear to have been merely nominated suppliers, and the only duty and liability, as far as the contractors are concerned, is for the fixing of the curbs.

Crumbling of Concrete Floors

Q.—We have received an inquiry regarding the crumbling away of a concrete floor at a local brewery, which appears to be caused by the oversp ll of beer eating into the concrete. We wonder if there is a suitable preparation which can be incorporated in the concrete mix to counteract this effect? Perhaps you could also advise whether a concrete surface is best for this type of floor?

CONTRACTOR.

A.—Suitable hardeners can be and are used in concrete and granolithic flooring, but these products require periodical replacement. The most widely used are iron and steel parings and a good material for use is a form of steel reinforcement which consists of steel strips bent into zig-zag shape and having holes pierced in the apex of each angle. The strips are placed together to form a series of squares and steel rods are passed through the holes to tie the construction together,

with small metal footplates fixed at the apex of each angle. This prevents the mesh from sinking into the underlay of the acid-resisting asphalt. The squares of the mesh are filled flush with the top edges of the mesh and, with the steel rods acting as a reinforcement, the entire surface is an expanse of asphalt and no part can move without the movement of the whole.

The reason for suggesting the reinforcement in the acid-resisting asphalt is that, while the asphalt will resist the overspill of beer, the severe wear and tear caused by the movement of iron-rimmed barrels is met by the mesh reinforcement. If there is no movement of barrels to cut up the surface, terrazzo could be used or specially made vitreous tiles; or a proprietary type of flooring.

G. W. H.

[The names of the proprietary materials recommended have been forwarded.—ED.]

THE ASSEMBLY HALL, WESTMINSTER

Reconstruction Progress

GOOD progress has been made in rebuilding the Assembly Hall of the Church House in Dean's-yard, Westminster, and it is expected that it will be completed in time for the Autumn Session of the Church Assembly. According to the report, which will be presented by the Archbishop of Canterbury at the annual meeting on June 29, this hall, which was destroyed by enemy action, will be one of the most dignified halls of its kind in London.

The design of the original building was by the late Sir Herbert Baker, and his partners have taken a keen interest in the restoration work. During the reconstruction of the war-damaged hall the opportunity has been taken of introducing the additional facilities and amenities required for congresses and large international meetings. These will include a system of amplification which should give complete audibility throughout the hall, whether speeches are made from the platform or from any seat in the body of the hall.

The system is too highly technical to describe in detail here, but one of its main features will be its unobtrusiveness, which will preserve the intimacy of debate. Facilities for the simultaneous interpretation of speeches into any other language will also be made available.

Mr. A. T. Scott, an associate of Sir Herbert Baker, designed a special sign which has recently been placed over the Great Smith-street entrance to the Church House, Westminster. This is made in wrought iron with a decoration picked out in gold. The design incorporates the Star of Bethlehem and the Cross, the two accepted symbols of the birth and death of Our Lord.

DRY ROT EXHIBITION

Provincial Tour

Arrangements have been made for a tour of the Dry Rot and Woodworm Exhibition sponsored by the D.S.I.R. It will visit most large provincial centres during the rest of this year and the early part of 1951, and the list below gives the dates and locations which have been fixed. It is hoped that the exhibition will visit Liverpool if satisfactory arrangements can be made, probably from November 15 to 23.

Both dry rot and woodworm damage to wood have been increasing recently, and the exhibition shows how to recognise such attacks, how to deal with them, and how to prevent them. It is designed to assist anyone who may have to cope with an attack.

In general, the centres to be visited are those damaged during the war, for the destruction caused by bombing has helped dry rot and woodworm to spread.

The tour has been arranged as follows (closing dates are in parentheses): June 28, Masonic Hall, Little Park-street, Coventry (July 6); July 12, Demonstration Hall, North-West Gas Board, Fishergate, Preston (July 20); July 26, College of Technology, Manchester (August 3); August 9, Bainbridge Hall, Newcastle (August 17); August 23, Dick Institute, Kilmarnock (August 31); September 6, School of Economics, Bell-street, Dundee (September 14).

September 20, Music Hall, George-street, Edinburgh (September 28); October 4, Market Hall, Carlisle (October 12); October 18, College of Commerce and Technology, Salmon Pastures, Warren-street, Sheffield (October 26); November 1, The Technical College, Bradford (November 9); November 29, Queen's Hall, Hull (December 7); January 3, Mechanics' Institute, Mansfield-road, Nottingham (January 11); January 17, Museum-buildings, High-street, Ipswich (January 25).

January 31, Castle Museum, Norwich (February 6); February 14, Town Hall, Dover (February 22); February 28, Portsmouth (March 8); March 14, Southampton (March 22).

OFFICIAL NOTIFICATION

Steel Sheet Distribution

The Ministry of Works announces that although control has been removed from the distribution of steel—except sheet steel, tinplate, ternplate and blackplate—by the "Control of Iron and Steel (No. 79) Order 1950" (S.I. 1950/829) it has been decided by the Government that statistics of deliveries to the main consuming industries must be maintained. The new procedure applicable to decontrolled steel is set out in an Order (S.I. 1950/873, H.M.S.O., 6d.) which came into operation on June 4.

Under the new Order instead of quoting an I.S. authorisation number with a departmental symbol, the consumer has now only to include in his order the words "Iron and Steel Utilisation Record" and the letters "INDY" followed by the appropriate industrial symbol. The symbol for building and contracting is WBL, for constructional engineering KOS and for other non-electrical engineering LON.

A symbol is unnecessary for cash purchases not exceeding £5 aggregate in any one month. Consumers are asked to notify suppliers as soon as possible of their industrial symbols concerning outstanding orders.

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NEWS IN BRIEF

Russian Timber Contracts.

Further details about the Russian timber contracts, the signing of which in Moscow was announced recently, are now available. Contracts have been signed for 153,000 standards of softwood with the possibility of a further 50,000 standards later.

Sussex Builders' Golf.

The Edifice Golfing Society of Sussex held a Stableford Competition at Ham Manor Golf Club, Angmering, on June 7. A. C. Franklyn won first prize with 36 points and F. W. Hill was runner-up with 35 points. The next meeting will be held at Royal Ashdown Forest Golf Club on July 19.

Census Questions on Housing.

A draft Order in Council has been laid before Parliament providing for a census of Great Britain to be held on April 8, 1951. It will be the first since 1931. Apart from other details, information will be required of the number of living rooms occupied by persons included in the returns and amenities provided in them. It will be asked concerning each household whether it has exclusive or shared use of a piped water supply within the house, a kitchen sink, a cooking stove or range, a water closet, and a fixed bath.

National Working Rule—Watchmen.

The National Joint Council for the Building Industry, at its statutory meeting on January 18, 1950, considered the terms of Constitutional Amendment Notices from the employer and operative adherent bodies proposing the incorporation in National Working Rule 1 of rates of remuneration for watchmen. At its annual meeting on April 27, 1950, the Council received and considered a report and recommendation from the General Purposes Committee, to whom the proposals had been referred for detailed examination, and adopted the following addition to National Working Rule 1:

"WATCHMEN. The remuneration payable to watchmen shall be on the basis of a rate per shift, namely: *London and Liverpool*—15s. per shift, day or night; *Provinces*—13s. per shift, day or night. The daytime shift shall be the normal period of day working hours for the job or shop. The night shift shall be the period between normal finishing time on the job or in the shop and starting time next morning. Where week-end watching is required, a relief watchman shall be employed from the time men cease work on Saturday until 6 p.m.—for which he shall be paid half-shift—and on Sunday from 8 a.m. to 6 p.m. for which one full shift shall be paid. Where overtime is necessary to be worked on a Saturday mutually agreed arrangements shall be made." The amendment will operate on and from July 3 next.

Building Employment Figures.

According to the latest figures published by the Ministry of Labour, the number of persons employed in the building and civil engineering industries at the end of April was 1,488,000. This figure is 6,000 above that for the pre-

President, P. Alder; Vice-President, the middle of 1948.

Painting Contractors' Officers.

At the Ninth Annual General Meeting of the Federation of Painting Contractors, held at Oddenino's Hotel on June 6, the following officers were elected for the year 1950-51:

President, P. Alder; Vice-President, A. E. Wilson, V. W. Hosp, P. H. Kenyon, A. S. Bagnall; Chairman, V. W. Hosp; Hon. Treasurer, P. H. Kenyon; Council, S. J. B. Abbott, E. Bayliss, S. Clipson, T. Cotton, B. D. Gibbs, G. C. Jones, W. Gordon Lilly, J. Overton, G. F. Simpson, W. S. Vaughan and F. J. Williams.

New Engineering Factory.

Reinforced concrete has been extensively used in the construction of a new engineering factory at Bushey, on the Watford by-pass, the architects for which are Messrs. Welch and Lander. The roof, which is barrel-shaped, is entirely of reinforced construction and has no support except on the outer walls which are 90 ft. apart. Large-size storage "tunnels" are provided under the main production floor as are also ducts which carry electric and heating services. The walls throughout have been sprayed with a light-colour washable cement finish.

The Two Reports.

The Ministry of Works issued the following statement after the meeting of the National Consultative Council on June 14: The National Consultative Council of the Building and Civil Engineering Industries, with the participation of representatives of the Federation of Associations of Specialists and Sub-Contractors, met this afternoon under the chairmanship of the Minister of Works to resume consideration of the reports of the Building Working Party and of the Anglo-American Productivity Team. The Council has now completed its first review of the main recommendations of the reports, and has agreed on action on a number of points, and arranged for further detailed examination of others. A further meeting of the Council will be held shortly to receive reports of progress.

Careers in Building.

Two lectures, of interest to parents of boys who contemplate entering the building industry, will be given during the "Careers in Building" Exhibition which has been organised by the Ministry of Works and the Brixton School of Building, on June 29 to July 8. These are: "Building Trades Apprenticeship" by Sir George Gater, G.C.M.G., K.C.B., D.S.O., Chairman of the Building Apprenticeship and Training Council, and "Opportunities and Prospects for Building Apprentices" by Mr. E. L. Jones, M.B.E., Secretary of the National Federation of Building Trades Operatives (London Regional Council).

The lectures will be held in the Library of the L.C.C. Brixton School of Building, Ferndale-road, S.W.4, on July 5 and 6 at 7 p.m. Each lecture will be illustrated by a film on the training of boys to be craftsmen in the building industry; and questions concerning education, training and apprenticeship will be answered.

Eastern Employers' Conference.

The Eastern Federation of Building Trades Employers held their summer meeting at Lowestoft from June 5-7 under the presidency of Mr. J. W. Croft. Following a reception on June 5 by the Mayor (Cllr. P. C. Utting) and the Mayoress, the half-yearly meeting was held on June 6, followed by an official luncheon at the Royal Hotel. A full social programme was organised by the Lowestoft and District Committee.

Register of Architects.

The Architects' Registration Council of the United Kingdom, 66, Portland-place, London, W.1, have just issued the Register of Architects, Volume Seventeen. On December 31, 1949, there were 15,824 names on the Register. During 1949, 728 names were added to the Register, 42 names were restored and 451 names were removed from the Register owing to deaths, resignations and other causes. The price is 5s.

School Building in Ireland.

The Northern Ireland Minister of Education (Mr. H. C. Midgley) said recently that he is examining, in conjunction with the Ministry of Finance, the possibility of establishing a schools building trust. He said that if this could be accomplished they could at least double the output on erection of intermediate schools within the next ten years. If the local education authorities would agree to delegate the authority for the building of schools to this centralised authority (upon which all the local education authorities would be represented) for a period of ten years he believed that the results would be so astonishing and beneficial that at the end of the decade there would be a united request for the carrying on of the good work.

Planning Minister's Refusal.

Mr. Hugh Dalton, the Minister of Town and Country Planning, has refused permission to Mr. H. J. S. Davies to build two bungalows at Llanwenarth Citra, near Abergavenny, in the proposed Brecon National Park. The site on which Mr. Davies wanted to build occupies a commanding position on the hillside forming the foreground to the Sugar Loaf Mountain and overlooks the valley of the River Usk. In giving his decision, which followed an appeal by Mr. Davies, Mr. Dalton states that "in general, stronger justification than is required elsewhere needs to be shown by a person who wants to build a house for himself in a National Park, away from the towns and larger villages, and whose occupation does not require him to live there."

Permission to Build.

MR. J. STOKOE, an ex-miner, has been given permission by the Minister of Town and Country Planning to build a bungalow at Broomwood Huts West, Mickley-square, Stocksfield-on-Tyne. This permission had been refused by the Prudhoe Urban District Council, and Mr. Stokoe exercised his right of appeal. In the letter announcing the decision, the words used are that "the Minister considers that it is a serious responsibility, not to be lightly undertaken by planning authorities anywhere, to forbid an individual to build a small house on a small piece of land owned by him, where the development is unobjectionable on grounds of amenity, and where the provision of public services would involve no exceptional costs." The Council had put forward the view that the development would be "sporadic and ribbon," but in the Minister's opinion it would constitute what is sometimes called "infilling."

Tax on Commercial Vehicles.

The following statement has been issued by the Road Haulage Association: "The announcement by the Government of an adjustment in the tax on commercial vehicles is merely an attempt at face-saving in view of the widespread dissatisfaction caused by the first proposal. The effect of the concession is comparatively small. It would appear to reduce purchase tax on the average to about 27 per cent. as against the original 33⅓ per cent., except for certain more expensive vehicles, such as those constructed to carry liquids in bulk, where the tax may be reduced to about 15 per cent. The purchase tax modifications will not justify any change in the recent announcement by the Road Haulage Association of increases in charges. This means that the inflationary effect of the budget proposals, and, more particularly, of the petrol tax, will continue."

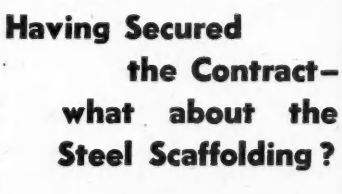
BUILDING CONTROLS RENEWED

IN the House of Commons on June 19 the Minister of Works announced that the control of building operations would continue for the year beginning July 1, 1950.

The new Order (Control of Building Operations (No. 15) Order, S.I. 1950, No. 968) renews the financial limits within which building and civil engineering work may be carried out without a licence. The limits remain unchanged.

The total amount of work which may be done on any property without a licence in the period July 1, 1950, to June 30, 1951, is £100. On "designated buildings," that is to say, industrial buildings and farm buildings other than dwelling houses, £500 worth of work may be done in the same period without a licence, but the total allowed for any property, however many designated buildings it may contain, will in no case exceed £500.

Having Secured the Contract—what about the Steel Scaffolding?



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TRADE NEWS

Rubber Manufacturers' President.

Mr. T. H. Redfern, chairman and managing director of Redfern's Rubber Works, Ltd., Hyde, has been elected president of the Federation of British Rubber Manufacturers' Associations for the year 1950-1951.

A Vibrating Roller.

An illustration given in our British Industries Fair issue (May 12) wrongly described a vibrating roller shown by Stothert and Pitt, Ltd., of Bath. This piece of plant was, in fact, a *hand*-propelled vibrating roller.

B.E.M. Award.

The British Empire Medal was awarded to Mr. I. Girling, chairman of the Works Councils at the Newcastle and Grantham works of Messrs. Aveling-Barford, engineers, in the recently published Birthday Honours List.

125 Years of Building.

To the memory and inspiration of Thomas Lowe, their founder, the firm of Thomas Lowe and Sons, Ltd., of Curzon-street, Burton-on-Trent, have dedicated a brief history of the achievement of the building enterprise which he founded a century and a quarter ago.

Stanmore Development.

Radiation, Ltd., of 7, Stratford-place, London, W.1, have just published a new booklet called "The Stanmore Development." This gives the conclusion of the Stanmore experiment in house-warming by means of ducted air, described and illustrated in *The Builder* of September 30, 1949.

Arundel Castle, Sussex.

We are informed that the contract department of Messrs. Szerelmey, Ltd., 273-277, Rotherhithe New-road, London, S.E.16, has recently completed considerable works of restoration and preservation upon the Barbican Towers and Gateway and also the North Gate of this historic building.

Home Decoration Exhibition.

The Finch Organisation, on June 2, opened an exhibition of wallpaper and interior decoration at their showroom in Eastern-avenue, Ilford, Essex. This permanent exhibition comprises full-size sections of a number of rooms, making the judging of the actual effects of the various types of paints and wallpapers more easy.

Dollar-earning Development.

Crompton Parkinson, Ltd., Crompton House, Aldwych, W.C.2, announce the development of a new range of A.C. motors, initially between 1 and 20 h.p., based on American and Canadian standards. This development, it is claimed, will help British manufacturers to meet the requirements of all markets both overseas as well as home.

A New Plastic Block.

In connection with the exhibition which they have been holding to commemorate their centenary, Messrs. W. N. Froy and Sons, Ltd., Brunswick Works, Hammersmith, London, have announced the introduction of the Luma-Block, which is a hollow plastic block specially recommended by the firm for interior use, such as for partition panels in restaurants, halls, waiting rooms, offices, etc. The new block has been put to effective use, both structurally and decoratively, in various parts of the exhibition.

THE SCOTTISH BUILDER

NEW BUILDINGS

Glasgow.—Plans in hand for alterations and additions for the Willington Picture House, Ltd., at Commercial-rd., for which the architects are Malcolm Ross & Son, 82, Main-st., Motherwell-Wishaw.

Glasgow.—Plans in hand for new buildings at 17 to 29, Allan-st., for Andrew D. MacNair & Co., Ltd., of Sommerfield-st., and for which the architects are William Baillie & Son, Accountancy Hall, 4, West Regent-st., Glasgow, W.C.2.

Glasgow.—Corporation, at estimated cost of £24,500, is to erect at Priesthill a new community centre, for which the architect is John MacNab (F.), 129, Bath-st., Glasgow, W.C.2.

Greenock.—Plans to be prepared for a scheme of houses which the corporation is to erect at The Grieve-rd., for which the architect is R. L. Rankine, Municipal-bldgs., Wallace-sq., Old Vennel, Greenock.

Lanarkshire.—Plans to be prepared for a scheme of 85 houses at Burnshead site and for which the architect is Mr. Samuel MacColl (F.), County-chbrs., Beckford-st., Hamilton.

Lanarkshire.—Plans in hand for new houses to be erected by the Scottish Special Housing Association, Ltd., 15, Palmerston-pl., West End, Edinburgh, at Bothwell.

Stirlingshire.—C.C. has plans in hand for Catholic school for Falkirk at estimated cost of over £149,000 and for which the architect is Alexander Jamieson Smith (F.), Old Infirmary-bldgs., Spittal-st., Stirling.

West Lothian.—C.C. to erect a new Catholic school at £97,000 at Broxburn and for which the architect is Mr. G. P. Booth (F.), County A. and Engineer, West Lothian-bldgs., Linlithgow.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications: the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 26.

†**Birmingham T.C.**—16 houses at Bowman-rd., Booth's-la., estate, contract 125; 24 houses at Booth's-la., Booth's-la. estate, contract 131. City E. & S., Civic Centre. Dep. £2 2s. each contract.

†**Taunton T.C.**—28 houses, Holway estate. Boro' Housing A., 2, Baldwin-rd. Dep. £2.

JUNE 28.

†**Hampshire Police Authority.**—Police house at Fore-st., New Milton, and one at Shipton Bellinger. County A., The Castle, Winchester. Dep. £1 1s. each.

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†**Walthamstow T.C.**—16 flats, 4 maisonettes and 5 houses, Wyatts-la., E.17. Boro' A. Dep. £2 2s. Tenders by July 18.

JUNE 30.

†**Birmingham T.C.**—Civic restaurant at Birchfield-rd., Perry Barr, and civic restaurant at Gooch-st., Balsall Heath. Secretary, Restaurants Dept., 11, Cambridge-st. Dep. £3 3s. each. Tenders by July 14.

†**Blackburn R.D.C.**—Erection of booster station at Ramsgreave-rd. C., Council Offices. Dep. £2 2s.

JULY 1.

†**Essex C.C.**—Rebuilding works, etc., Brentwood County High School for Girls. County A., Chelmsford.

JULY 3.

Lambeth B.C.—Public convenience at Pope's-rd. B.E., Town Hall. Dep. £2 2s.

†**Northampton C.B.**—40 houses, Sunnyside, Boro' A. Dep. £2 2s. Tenders by July 24.

Rawmarsh U.D.C.—34 houses, Monkwood estate. J. R. S. Creighton, S. Dep. £5.

Tamworth T.C.—50 houses, Fazeley-rd. H. F. Bruce Smith, B.E. & S.

†**Tottenham B.C.**—Two aged persons' flats at Chalgrove-rd. B.E. & S., Town Hall. Dep. £2 2s.

†**Winchester City.**—20 dwellings, New Stanmore housing estate. A. S. Wilson & Piners., chartered quantity surveyors, 8, Prince's Gate, Westminster, London, S.W.1. Dep. £2 2s.

JULY 4.

†**Great Yarmouth C.B.**—Erection of second and major part of Beccles-rd. Secondary Modern Girls' School. F. Jackson (A.), Schools Architect, 15, Regent-st., Great Yarmouth. Dep. £2 2s. Tenders by July 24.

JULY 5.

†**Enfield U.D.C.**—68 houses, Bullsmoor-la. North. Frank Lee, E. & S. Dep. £2 2s. Tenders by July 24.

Leyton T.C.—Improvements to 200 Nissen-type temporary dwellings on three sites. B.E. & S. Dep. £2 2s.

†**West Ham C.B.**—28 houses, Arthingworth-st. area, E.15. T. E. North, F., Boro' A., 70, West Ham-la., E.15. Dep. £2 2s.

JULY 6.

Sunderland C.B.—Completing the erection of the crematorium at Bishopwearmouth Cemetery. Boro' A., Grange House, Stockton-rd., Sunderland. Dep. £2 2s.

JULY 7.

Dunstable T.C.—26 houses at Beecroft and Brewers Hill estates. R. R. Hole, B.S., Municipal Offices. Dep. £2 2s.

Harrow U.D.C.—Reconstruction and adaptation of "West House," West End-la., Pinner. H. W. Rackham, F.R.I.C.S., E. & S., Council Offices, Stanmore. Dep. £2 2s.

†**Malden and Coombe.**—Public convenience, Plough Green, Malden. H. M. Collins, B.E.

JULY 10.

Burnley C.B.—Public Health Centre, Sycamore-ave. B.E. & S., 22-24, Nicholas-st.

†**Esher U.D.C.**—Three shops with flats over, Northfield Farm estate, Cobham. E. & S. Dep. £1 1s.

Rugeley U.D.C.—26 houses on the St. Michael's Church site, fronting Redbrook-la. to Birch-la., Brereton, Rugeley. E. J. James, E. & S., The Council House, Rugeley. Dep. £2 2s.

Salford T.C.—Two additional classrooms at Tootal-dr. primary school. City E., Town Hall. Dep. £1 1s.

JULY 11.

Staffs C.C.—Painting 3 bridges. T. H. Evans, clerk. Dep. £1 1s.

JULY 12.

Bootle C.B.—12 dwellings (one block of three-storey flats) at Captain's-la. B.S., Town Hall. Dep. £2 2s.

JULY 13.

East Retford R.D.C.—24 houses at Sutton with road and sewage works, etc. R. L. Gay, C., Council Offices, Amcott House. Dep. £5 5s.

JULY 15.

Dartford T.C.—16 dwellings at Temple Hill estate. T.C., High-st. Dep. £2 2s.

Saffron Walden R.D.C.—16 houses at Clavering. C., Council offices.

JULY 17.

Burnley C.B.—Infants' school at Myrtle Bank. Quiggin and Gee (FF.), 11, Old Hall-st., Liverpool, 3. Dep. £2 2s.

Chelmsford T.C.—45 flats, Woodhall estate; 14 houses and 24 flats, Chignal-rd. estate. B.E., S., and Arch. Dep. £2 2s. per set.

Lincoln T.C.—11 flats and maisonettes at Boultham Moor North estate. City A., Stamp End. Dep. £3 3s.

Salford T.C.—Junior and infants' school at Bolton-rd. and Summerville-rd. City E., Town Hall. Dep. £3 3s.

Smethwick C.B.—Infants' school, Hamilton-rd. R. Fletcher, B.E. & S. Dep. £2 2s.

Weymouth and Melcombe Regis T.C.—54 houses at Rylands-la. estate. B.E. & S., 6, Pulteney-bldgs. Dep. £2 2s.

JULY 19.

Wisbech T.C.—Four aged persons' dwellings

at Mount Pleasant/Bath-rd. estate. B.E. & S., Town Hall. Dep. £1 1s.

JULY 20.

***Kendal T.C.**—34 houses, Hallgarth estate. J. Barnfather, B.E. & S. Dep. £2 2s.

***Norfolk C.C.**—Alterations and renovations to Tannery House, Thetford, for conversion to local health offices. County A., 27, Thorpe-rd., Norwich.

JULY 21.

***Cardiff City.**—Six shops and flats at Rumney, Ely and Fairwater housing estates. City S. Dep. £2 2s.

***Malmesbury R.D.C.**—Eight houses, Upper Minety site. Edwards and Webster, architects, 32, Market-pl., Chippenham. Dep. £3 3s.

JULY 24.

***Brighton C.B.**—Extension to factory at Hollingbury estate, Light Industrial Area, together with canteen. D. J. Howe, M.Inst.C.E., 26-30, King's-rd. Dep. £5 5s.

JULY 25.

***Hemel Hempstead B.C.**—68 houses in three contracts at Belswains Farm estate. B.B., Market-sq. Dep. £2 2s. each tender.

***Martley R.D.C.**—8 houses, Abbeyley. E. J. Turner, 1, The Tything, Worcester. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JULY 3.

†**Watford B.C.**—Internal redecoration of the large public hall, Town Hall, Watford. Work to be carried out between July 31 and August 31. B.E., Town Hall, Watford.

JULY 5.

***Erith Boro'.**—Damp-proof course on approx. 72 houses, Lesney Farm housing estate. J. A. Crompton, T.C.

ROADS, SEWERAGE AND WATER WORKS

JULY 7.

Bristol C.C.—Construction of roads and sewers on the Henbury estate (third section). City E., Arno's Court, Bath-rd., Brislington, Bristol, 4. Dep. £2 2s.

Leicester C.C.—Reconstruction of portion of Birmingham-Gt. Yarmouth trunk road. County E. & S., Grey Friars, Leicester. Dep. £5.

Maidenhead B.C.—Construction of footways and verges and erection of r.c. lighting columns on the Curls-la. estate. B.E. & S., 14, Craufurd-rise, Maidenhead. Dep. £2.

Plympton St. Mary R.D.C.—Construction of sewage disposal works, sewage pumping station, etc., at Plymstock sewerage scheme. E. & S., Council Offices, Plympton. Dep. £3 3s

JULY 8.

High Commissioner for Pakistan.—Provision and laying of cast-iron pumping and asbestos cement distribution mains (80 miles), R.C.C. sewer mains, reservoirs and pressed steel water tank near Rawalpindi (West Pakistan). Commercial Secretary, Supply and Stores Dept., 40, Lowndes-sq., London, S.W.1. Fee 5s

JULY 10.

Basford R.D.C.—Construction of concrete pipe sewer (1,000 yds.). J. J. Ellis, M.I.Mun.E., E. & S., Rock House, Stockhill-la., Basford, Nottingham.

London C.C.—Construction of roads in Stepney-Poplar reconstruction area (neighbourhood nine). Chief Engineer, County Hall, S.E.1. Dep. £5.

JULY 12.

Blandford R.D.C.—Laying of cast-iron and asbestos cement water mains, also construction of r.c. reservoir. Aubrey J. Allen, F.R.I.C.S., consultant engineer, Half Moon-st., Sherborne, Dorset. Dep. £4 4s.

JULY 14.

West Dean R.D.C.—Laying and jointing of bitumen-lined steel water mains and spun-iron water main with fittings; also the construction of pumping station, concrete collecting basin, and concrete reservoir, in connection with the West Dean water supply, contract No. 3. Willcox, Raikes and Marshall, 33, Gt. Charles-st., Birmingham. Dep. £5 5s.

JULY 15.

Camborne Water Company.—Supply and laying of about 3¼ miles of spun-iron pipe mains. Secretary, 100, Pydar-st., Truro, Cornwall. Dep. £2 2s.

***Saffron Walden R.D.C.**—Roads and sewers at Widdington. C., Council Offices.

JULY 17.

Pembrokeshire C.C.—Surfacing of 10 sections of county roads. County S., South Wales Hotel, Neyland.

AUGUST 15.

Stoke-on-Trent T.C.—Work in connection with the Blithe Valley sewerage and sewage purification scheme in four contracts. City Sewage E., Leek-rd., Stoke-on-Trent. Dep. £5.

GENERAL BUILDING WORK

(LONDON)

Battersea.—SHOPS AND MAISONETTES.—Housing comm. have approved scheme, prepared by council's architects' department, for the erection of six shops and six two-storey maisonette flats above on site of 208-218, Battersea Park-rd.

Battersea.—FLATS.—Council's architects' dept. have prepared plans for one four-storey block of four flats on site of Nos. 116 and 118, Lavender-hill. Housing comm. have approved plans.

Battersea.—FLATS.—De Metz and Birks, FF.R.I.B.A., 2, Ludgate-hill, E.C.4, have prepared scheme consisting of 210 flats, three laundries, 110 perambulator and cycle stores, and two fitted playgrounds on the Patmore-st. site, Battersea. Est. cost £374,200.

Greenwich.—DEVELOPMENT.—L.C.C. Housing comm. have approved scheme, prepared by Percy V. Burnett and Partners, F.R.I.B.A., 12, Bloomsbury-sq., W.C.1, for development of Brook-la. site, of 9.32 acres in extent. 0.7 acre to be reserved for library and 0.3 acre allocated to nursery school. On the remainder is proposed 94 flats, 64 houses, 12 garages, a communal laundry, fitted playground, 47 perambulator stores and cycle sheds. Est. cost. £279,470.

Hammersmith.—FLATS, MAISONETTES AND SHOPS.—L.C.C. housing comm. have approved scheme prepared by the Architect to the Council, comprising 118 flats and maisonettes, six shops, 46 perambulator sheds, six garages and a children's playground on site adjoining the White City estate. Est. cost, £254,900.

Harold Hill.—SHOPPING CENTRE.—A subsidiary shopping centre comprising 12 shops with 12 maisonettes above and 26 garages is proposed by L.C.C. housing comm. Plans by Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est. cost, £57,200.

Harold Hill.—AREA OFFICE.—L.C.C. propose two-storey building with offices in the central portion and a four-roomed house at each end, and stores, workshops, a messroom and garages in the yard. Plans prepared by Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est. cost, £16,340.

Hendon and Hampstead.—FLATS.—G. E. Bright, F.R.I.B.A., 35a, Thayer-st., Manchester-sq., W.1, is the architect for 46 flats, a laundry, 23 perambulator stores, fitted playground and six garages on the Burgess Hill site. Est. cost, £88,800.

Lewisham.—HOUSES.—L.C.C. housing comm. propose six houses on site in Dunfield-rd., Bellingham estate. Plans by Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est. cost, including accommodation road, £9,900.

Oxhey.—SHOPPING CENTRE.—L.C.C. housing comm. have approved the provision of two buildings to accommodate eight multiple stores, 55 shops and a post office. There will be 25 flats and 57 maisonettes above the shops and 36 perambulator stores and 40 garages. Site has been reserved in Bridlington-rd., St. Andrew's-rd. and Prestwick-rd. Plans by the Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est. cost, £367,670.

Oxhey.—SUBSIDIARY SHOPPING CENTRE.—A subsidiary shopping centre in Prestwich-rd., consisting of eight shops with eight maisonettes above, eight perambulator stores and 21 garages, is proposed by L.C.C. Plans by the Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est. cost, £32,370.

Poplar.—PUBLIC HOUSE.—A public house with licensee's flat above is to be erected at the junction of Hind-gr. and Paris-terr., Poplar, on housing site No. 5 in Lansbury, Stepney-Poplar reconstruction area. Architects are Norman and Dawbarn, F.R.I.B.A., 5, Gower-st., W.C.1. Est. cost, £14,258.

Wandsworth.—OLD PEOPLE'S DWELLINGS.—L.C.C. propose to build two dwellings for old people and a building, comprising a messroom and washing accommodation with a club room on the upper floor, on site in Derinton-rd., Totterdown Fields estate, Wandsworth. Plans by the Housing A. of the department of the Director of Housing and Valuer, L.C.C. Est cost, £8,760.

Westminster.—DEVELOPMENT.—The Minister of Health, in conjunction with the Minister of Town and Country Planning and after consultation with the R.I.B.A., has nominated Professor A. E. Richardson, R.A., M.A., F.R.I.B.A., as architect for the development of the Pond-rd. housing site.

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(PROVINCIAL)

Blackburn.—T.C. to commence new 1,000 house estate at Shadsworth, with provision for sec. school, 2 nursery schools, community centre, 2 churches, and 2 public-houses. Plans by Boro' E., W. Pickstone.

Cheshire.—C.C. to invite tenders for adaptation of "Kilrie," Knutsford, to form a reception centre and short-stay nursery, at £12,000. —Propose adaptation of "Hulme Hall," Cheadle Hulme, as aged persons' home. County A., F. Mainwaring Parkes, Chester.

Consett.—U.D.C. negotiating for further housing sites. Council's architect, J. J. Eltringham, Derwent-st., Blackhill, Co. Durham.

Coventry.—T.C. to seek loan of £23,498 for occupational centre for mentally defective children at Burns-rd. City A., Donald E. E. Gibeon.

Cumberland.—C.C. propose police stn. at Thursby.—E.C. propose alterations at Westmorland Farm School, Newton Rigg.

Gateshead.—Chief A. (H. J. Cook) has prepared plans for 24 flats in East-st. on Park-la. estate. Question of building high blocks of flats on same site being considered by T.C.

Glendale.—R.D.C. approved plans for television relaying station at Horsdel.

Hebburn-on-Tyne.—U.D.C. to consider building old people's hostels.

Hemsworth.—R. Thornton, Ltd., Cleckheaton, propose new light engineering factory at South Kirby.

Hindley.—U.D.C. surveyor to prepare plans for further houses at Castle Hill estate.—Approved plans for houses at Atherton-rd., Hindley Green, for J. Peters & Sons, Ltd.

Leeds.—T.C. to invite tenders for 282 flats at Tinshill, Moortown, Ireland Wood and Cookridge estates, and 84 dwellings at Fearneville estate. Plans by City A., R. A. H. Livett.—Approved plans for:—Dairy at Holywell-la., Shadwell, for H. Haw.—Factory at Kirkstall-rd., for Wetheralds, Ltd., 147, Park-la., Leeds 1.

Leics.—E.C. approved following:—Women's hostel at Loughborough (£50,000); Prefabricated science blocks at Hinckley Westfield Mod. School and Lutterworth Grammar School (£10,000); Prefabricated block at Loughborough College School (£5,000).

Leicester.—M.O.H. approved scheme for erection of new ambulance station and administrative centre, at £39,000.

Manchester.—Prison Commissioners propose conversion of old assize court near Strangeways into flats for prison staff.—A new block of courts to be erected on 14-acre site between Deansgate and River Irwell.

Mansfield.—T.C. propose 14 bungalows at Birding-st. estate.

Nant Conway.—R.D.C. preparing plans for 40 houses.

Newcastle-on-Tyne.—Final plans have been prepared for prim. school on Montagu estate, for E.C., to cost about £144,000. Architects, P. L. Browne, Son & Harding, Pearl-bldgs., Northumberland-st., Newcastle; quantity surveyor, J. W. Summers, 61, Westgate-rd., Newcastle.

Northants.—C.C. propose 31 houses at Wootton Hall and health centre at Corby.

North Riding.—C.C. is seeking M.H. sanction to borrow following:—£47,210 for erection of Grangetown County Prim. Infants' School; £7,000 for purchase of site for Redcar New County Prim. School; £47,210 for Thornaby County Prim. Infants' School; £165,200 for Whitby County Mod. School; £25,892 for H.Q. at Northallerton for police mobile patrol.

County E.C. to acquire sites for new schools at Redcar for R.C. school; at Romanby, Northallerton, for county prim. school; and at Thirsk for county grammar and mod. school.—C.C. to erect fire stn. at Skelton at £9 500.—Further 6 police houses to be erected by C.C. on racecourse site at Northallerton.

Peterlee (Co. Durham).—Peterlee Development Corp., Shotton Hall, Castle Eden, are to build 1,000 houses in next few years at Peterlee.

Contract arrangements will be made shortly for first 250.

Salop.—C.C. propose additional storey at Cross Hill fire stn. (commence October). County A., A. G. Chant.

Skelmersdale.—U.D.C. surveyor to prepare alternative layout plans for houses at High-st.

Stockport.—B.C. approved layout of 18 flats at Didsbury-rd. Architects, Cruickshank & Seward, 16, Princess-st., Manchester.—Propose erection of flats at Brinnington estate.—Received approval for adaptations at York House.—Robert Bailey & Son propose extensions at Dysart-st.—Manchester Reg. Hospital Board propose extensions to hearing aid distribution centre at Stockport Infirmary.

Mirrlees, Bickerton & Day, Ltd., propose extensions at Bramhall Moor-la. Architects, Dyneley, Luker & Moore, London.—J. Needham & Sons, Ltd., propose extensions to offices at Portwood foundry, Offerton-st.—Plant Steam Power Unit Manufacturers, Ltd., propose building for steam power unit manufacture at Priest-st.

B.C. approved layout for houses at Dalby-gr. and Bishop-st., for J. A. Jackson, Ltd., and T. Davies & Son, Ltd.—E.C. seek loan of £14,875 for final phase of Broadstone Hall-rd. Junior and Infants' School. School architect, L. Yates.—Approved layout for three 10-storey blocks of flats at Covent Garden and Banbury-st.

Stoke-on-Trent.—E.C. seek approval of plans for two new schools, Mill Hill County Prim. and Springfield County Prim.

Stretford.—Plans were approved for:—Factory and warehouse extension at Park-rd., Trafford Park, for Kellogg Co., of Great Britain, Ltd.—Administration building at Praed-rd., for Penmaenmawr & Trinidad Lake Asphalt Co., Ltd.—Canteen, workshop, store and office at Church-st., for F. Cuttell.—Five houses, Barton-rd., for W. Scott.

Sunderland.—Hall & Stafford, West Sunniside, Sunderland, appointed quantity surveyors by E.C., for Thorney-cl. Prim. and Infants' Schools.—Plans in hand by G. T. Brown & Son, 51, Fawcett-st., Sunderland, for garage and showrooms in Brougham-st. and Union-st.—Plans by H. C. Bishop, Boro' A., for 116 houses at Pennywell, have been approved.

J. Potts & Son, 57, John-st., Sunderland, are architects for rebuilding factory premises at Northwood House, Hudson-rd.—Newrick & Blackbell, 24, John-st., Sunderland, have prepared plans for reinstatement of premises and extensions in Paley-st.

Tarleton.—Trustees of Hesketh-la. Methodist Church received licence of £7,000 for church hall.

Tutbury.—R.D.C. propose six houses at Hadley End, Yoxall, 12 at Church-rd., Stretton, and 42 at Croft site, Tutbury. Surveyor, A. S. Broad.

Tyldesley.—U.D.C. approved preliminary plans for swimming baths and public hall. Surveyor, W. G. Barber.

Wakefield.—T.C. to invite tenders for further 52 houses at Eastmoor estate extension.—Approved plans for:—Houses at Portabello-rd. for Lumbs Dairy, Ltd., per L. Holdsworth, 35a, Woodthorpe-la. — Extensions at Universal Works, Benton Hill, Horbury, for R. Sutcliffe, Ltd.—Factory at 79, Lowefield-la., for J. A. Crane, Lowefield House, Lowefield-la., Wakefield.

Warrington.—B.C. approved plans for:—Factory extension at Cockhedge Mills, for Armitage & Rigby, Ltd.; four houses at Sandy-la., for Stamp, Bennett & Redfern.

Whitley Bay.—J. Oswald & Sons, Bradburn-chbrs., Northumberland-st., Newcastle-on-Tyne, are architects for proposed alterations to "Ship Inn."—Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, propose alterations to "Monkseaton Arms" Hotel and have prepared own plans.

Wigan.—Church Council of St. Anne's, Beech Hill, approved plans for enlarged church.

Wigan.—T.C. received approval to erect 35 police houses.

Worcs.—E.C. propose prim. infants' school at Alvechurch (1960 programme). A. C. Lomas, County A.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Blackburn.—44 houses, Higher Croft estate, for C.B. B.E., Town Hall: *R. F. Davis, Ltd., Farnworth.

Blackburn.—10 bungalows at Phillips-rd. and 12 at Higher Croft site, for C.B. B.E., Town Hall: *James Whittaker & Sons, Ltd., Bastwell, Blackburn.

Brighton.—Factory at Hollingbury Estate Light Industrial Area, for C.B. Architects, Clayton & Black & Partners, FF.R.I.B.A. Quantities by Arthur Boxall & Partners:—

Six lowest tenders are as follows:—

Y. Lovell & Son, Ltd., 10, Gildredge-rd., Eastbourne	£9,833
I. F. Richardson, Ltd., 146, St. Pancras, Chichester	9,644
Keith Andrew & Co., Worthing	£9,394
W. A. James & Son, Ltd., 121, Havelock-rd., Brighton	9,191
McKellar & Westerman, 143, Church-rd., Hove	9,130
*A. Alldritt, 79, Church-rd., Hove	8,816

Burnley.—28 houses at Brunshaw estate, for B.C.: *W. Wimpenny & Sons, Ltd., Prestwich, £42,300; 32: *Direct Labour, £42,319.

Colne.—22 houses at Derker-av., Marsden, for U.D.C.: *Holroyd, Brook & Eaglands, Ltd., Slaithwaite, £32,262.

Coventry.—60 flats and 51 garages for T.C., at Quinton Park: *G. Wimpey & Co., Ltd., London, £72,480.

Crewe.—Additional 30 "Easiform" houses at Middlewich-st. site, for B.C.: *J. Laing & Son, Ltd., Carlisle.

Cumberland.—Primary school at Seascale, for C.C.: *J. Laing & Son, Ltd., Carlisle.

Dewsbury.—128 houses at Chickenely site, for B.C.: *Harlow & Milner, Ltd., Wakefield, £134,634.

Doncaster.—Erection of 22 dwellings at Hatfield-la., Armthorpe, for R.D.C. J. A. Williams, surveyor, Nether Hall, Doncaster: *F. Haslam, Ltd., Regent-chbrs., Hall Cross, Doncaster, £27,173.

Dudley Training College Council.—Extensions to Lingwood hostel, St. James's-rd. A. C. H. Stillman (F.), Training College, Council Green Hall, Lichfield-rd., Stafford. Quantities by Henry Vale & Sons, 21, Waterloo-rd., Wolverhampton: *T. Payne & Sons, Ltd., 31, Churchfield-st., Dudley, £25,002.

Durham.—Additions to Stanley Grammar School, for County E.C. G. R. Clayton, County A., Court-la., Durham: *William Moss & Sons, St. Mary's-pl., Newcastle-on-Tyne.

Eastbourne.—New school, Milton-rd., for C.B. Raymond Williams, B.Sc., A.M.I.C.E.: *W. Llewellyn & Sons, Ltd., 3, Cornfield-ter., Eastbourne, £33,888.

Elgin.—Work in all trades for six houses at Newmill. Rowland Anderson, Kininmonth & Paul, architects, 107, High-st., Forres. Quantities by Messrs. Jas. D. Gibson & Simpson, quantity surveyors, 60, Frederick-st., Edinburgh 2:—Mason and brick works: *D. Forsyth & Co., Ltd., 39, South-st., Elgin £5,274. Carpenter & joiner works: *J. Johnston, 26, South College-st., Elgin, £1,749. Plumber work: *J. T. L. Parkinson, 457, Union-st., Aberdeen, £881. Slater work: *George Bain & Sons, 19, Mayne-rd., Elgin, £679. Plaster & cement works: *George D. Macpherson, 13, High-st., Aberlour, £1,249. Electrical work: *James Plucknett, Ltd., 132, George-st., Edinburgh, £572.

Frome.—28 houses, Rossiters-rd. site, for U.D.C. B. H. Parkes, S., 22, Christchurch-st West. Contract not let (work postponed).

Glasgow.—44 houses. A. J. Jury (F.), architect, Glasgow Cross, The Trongate, Glasgow, E.C.: *John Lawrence (Glasgow), Ltd., Glasgow.

Halesowen.—Erection of 50 houses at Hasbury Farm estate, for T.C. A. & J. Mucklow & Co., Ltd., £63,865.

Isle of Wight.—Erection of Practical block as first instalment of Bishop Lovett School, Ryde, for C.C. Thomas F. Ford (F.), 189, Victoria-st., London, S.W.1:—

Jukes & Sons, Ltd., Newport House, Cracker-st., Newport, I.o.W.	£26,534
James Ball & Sons, Ltd., Victoria-rd., Cowes, I.o.W.	26,321
Frank Batty & Smith, Ltd., 18, Spring-st., W.2	25,652
*Westridge Construction Co., Ltd., 15, High-st., Ryde, I.o.W.	24,728

Lanarkshire.—Erection of Royal Bank of Scotland. Messrs. Gratton & MacLean (FF.), architects, 113, West Regent-st., Glasgow, W.C.2: *Thomas Glaister & Son, Cleghorn, Lanark.

Leeds.—32 dwellings at Moortown, for T.C.: *Robert R. Roberts, Ltd., 122, Lower Wortley-rd., Leeds, £33,509.

L.C.C.—Main building work at Hurlingham (Fulham) and Putney Park-la. (Wandsworth) schools:—

W. H. Gaze & Sons, Ltd., Kingston-on-Thames	£209,020
Prestige & Co., Ltd., Westminster	190,820
Y. J. Lovell & Sons, Ltd., Paddington	189,850
Stewart & Partners, St. Marylebone	185,968
Henry Boot & Sons, Ltd., Kensington	185,200
C. P. Roberts & Co., Ltd., Holborn	184,750
Wilson, Lovatt & Son, Ltd., Westminster	181,959
Leslie & Co., Ltd., Kensington	181,300
Lavender, McMillan, Ltd., Worcester Park	179,620
Gee, Walker & Slater, Ltd., Westminster	178,578
J. Laing & Sons, Ltd., Mill Hill	178,337
A. T. Rowley (London), Ltd., Tottenham	176,146
Tersons, Ltd., Finsbury	175,395
C. F. Kearley, Ltd., Hammersmith	175,032
*M. J. Gleeson, Ltd., Cheam	171,726

Architect's comparable estimate is £175,752.

War damage repairs at Townsend-st. school, Southwark:—

J. Jarvis & Sons, Ltd., Westminster	£25,800
Lavender, McMillan, Ltd., Worcester Park	21,730
F. Troy & Co., Ltd., Southwark	20,792
Field-Davis, Ltd., Barking	20,256
J. Garrett & Son, Ltd., Wandsworth	20,238
F. & H. F. Higgs, Ltd., Lambeth	19,775
Whyatt (Builders), Ltd., Wandsworth	19,023
Amalgamated Building Contractors, Ltd., Lambeth	18,871
J. & C. Bowyer, Ltd., Croydon	18,188
*H. T. Oliver & Sons, Ltd., Lambeth	16,683

Architect's comparable estimate is £18,846.

War damage repairs at Tower Bridge county primary school, Poplar:—

W. Loweth & Sons, Ltd., Lambeth	£9,831
Drury & Co., Ltd., Hammersmith	8,930
William Mills & Sons, Ltd., Greenwich	8,724
John Harrison (London), Ltd., Camberwell	8,182
A. J. Dunning & Sons, Ltd., Woolwich	7,445
T. Ringham & Co., Ltd., Wimbledon	7,288
Henry Kent (Builders), Ltd., Lewisham	7,287
Herbert Richardson & Sons, Ltd., Erith	7,123
W. F. Marshall, Ltd., Buckhurst Hill	7,033
Gratton Wilson, Ltd., West Ham	6,994
Frdk. Smith & Co. (Builders), Ltd., Deptford	6,700
W. T. Champion & Son, Ltd., Camberwell	6,647
Harry Groves & Son, Ltd., Greenwich	6,596

Architect's comparable estimate is £7,000.

Reinstatement of members' and staff restaurants and kitchens at County Hall:—

F. R. Hipperson & Sons, Ltd., E.C.2	£55,127
Patman & Fotheringham, Ltd., Islington	53,284
Tersons, Ltd., Finsbury	51,227
Speirs, Ltd., Westminster	48,643
William Nicholson & Son (Leeds), Ltd., E.C.4	48,274
Gee, Walker & Slater, Ltd., Westminster	48,166
Foster & Dickson, Ltd., St. Marylebone	47,709
Holloway Brothers (London), Ltd., Westminster	46,854
Taylor Woodrow Construction, Ltd., St. Marylebone	45,879
Higgs & Hill, Ltd., Lambeth	43,221
*Holland & Hannen and Cubitts, Ltd., Westminster	42,669

Architect's comparable estimate is £43,768.

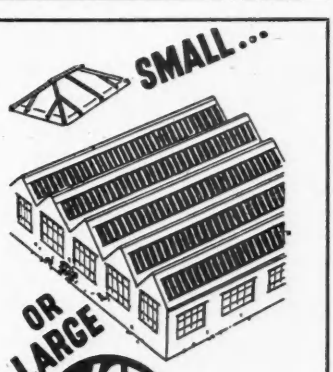
Construction of temporary roundabout at intersection of Waterloo-rd. and York-rd., Lambeth:—

Lavender, McMillan, Ltd., Worcester Park, Surrey	£118,128
Holland & Hannen and Cubitts, Ltd., Westminster	116,039
Howard Farrow, Ltd., Hampstead	113,978
*Fitzpatrick & Son (Contractors), Ltd., Poplar	109,999

Chief engineer's comparable estimate is £106,998.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Dept., Admiralty:—

Ford: R.N.A.S., Supply and erection of steel doors to hangar, The West Midlands Erection Co., Ltd., Erection House, Neachells-la., Willenhall, Staffs.



¶**London (Air Ministry).**—List of new contracts to value of £500 or over for week ended June 10:—

Maintenance work: S. M. Mulley, Ltd., Christchurch, Hants; C. Young & Sons, Andersier, Inverness; Beric, Ltd., Hurn Airport, Hants; F. Rendell & Son, Ltd., Devizes; A. R. Rainey & Co., Weston-super-Mare; M. & F. O. Foster & Co., Ltd., Hitchin, Herts; Haymill's (Cont.), Ltd., London, W.5; Markwell Holmes & Hayter, Ltd., Hull; James Miskinnin & Sons, Ltd., Belfast. *Building*: Fisher & Sons (Fakenham), Ltd., Fakenham, Norfolk; A. Monk & Co., Ltd., Padgate, Warrington. *Surface dressing work*: Wm. Tawse, Ltd., Angusfield, Aberdeen. *Painting work*: Fields, Ltd., Reading; A. Hector, Grabham, Ltd., Sunderland.

¶**London (M.O.W.).**—Contracts placed by M.O.W. for week ended June 10:—

London: Hans Crescent Hotel, Kensington, Alterations to form colohial students' hostel. F. Troy & Co., Ltd., 131, Great Suffolk-st., S.E.1; Hampstead telephone exchange, Alterations and additions, Howard Farrow, Ltd., Bank-bldgs., Russell-parade, Golders Green, N.W.1; Hendon relief telephone, Erection, Allen Fairhead & Sons, Ltd., Sydney-rd., Enfield.

**Gloucestershire*: Nailsworth Boys' Council School, Erection of two temporary office buildings, K. Warne, Ltd., 673a, Fishponds-rd., Bristol. *Hampshire*: Cosham, Erection of automatic telephone exchange, W. E. Chivers & Sons, Ltd., Devizes, Wilts. *Inverness-shire*: Inverness, Erection of temporary office building, R. Pert & Sons, Lower Balmain-st., Montrose.

Warwickshire: Midland telephone exchange, Hill-st., Birmingham, Erection of new canteen, H. M. Grant & Co., Ltd., Kings Norton. Birmingham; P.O. Factory, Fordrough-la., Birmingham, Erection of new timber store. John Adams (Contractors), Ltd., Ashold Farm-rd., Tyburn, Erdington, Birmingham.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended June 10:—

Edinburgh: Miscellaneous work, John Crow & Sons, Edinburgh. *Wilts*: Building work, Selleck Nicholls & Co., Ltd., St. Austell. *Yorkshire*: Miscellaneous work, Metcalfe & Jowitt, Ltd., York; Miscellaneous work, J. W. Maw & Sons, Ltd., York. *Kirkcudbrightshire*: Miscellaneous work, Clemie & Co., Kirkcudbright. *Lancashire*: Miscellaneous work, F. Parkinson & Son, Ltd., Blackpool; Building work, R. Stanley Ellison, St. Helens. *Warwickshire*: Building work, Hinkins & Frewin, Ltd., Banbury.

Mansfield Woodhouse.—72 houses at Coxs-la. estate, for B.C.: *C. H. Hill & Sons, Ltd., Mansfield. £92,945.

Market Drayton.—Provision of coal places, bathrooms, and hot and cold water systems in houses at The Crescent, for U.D.C.: *Mr. G. A. Wood, Hodnet.

Middlesbrough.—Converting Ward 10 into maids' quarters at the General Hospital, for Newcastle Regional Hospital Board: †John McCreton, Ltd., King's-rd., North Ormesby, Middlesbrough.

Newcastle-on-Tyne.—Erection of 42 houses on the Silver Lonnen site, for C.C. G. Kenyon, City A., 18, Cloth Market, Newcastle: *E. Jeffcock (Contractors), Ltd., 107, New Bridge-st., Newcastle-on-Tyne.

Pewsey (Wilts).—Erection of four houses at Milton, for R.D.C. L. J. Timothy, E. & S., Council Offices, Pewsey: *Direct Labour. £6,983.

Saltash.—Erection of six houses on the Liskeard-rd. housing site, for B.C.: A. de Barr, A.M.Inst.C.E., M.I.Mun.E., Boro' S., Church House, Saltash: *Powell Thomas & Sons, Ltd., Saltash, £7,182.

Shilbottle Colliery (Northumberland).—Erection of locomotive sheds, workshops and stores at Shilbottle Colliery, for N.C.B.: *F. Turnbull & Co. (Engineers), Ltd., Heaton, Newcastle-on-Tyne.

South Shields.—Improvements to X-ray dept. at South Shields General Hospital, for Newcastle Regional Hospital Board. P. H. Knighton, M.B.E., A.R.I.B.A., Board's architect: †Milton Swales, Ltd., Imeary-st., South Shields.

Swinton (Lancs).—Extensions to telephone exchange, for G.P.O.: *J. Gerrard & Sons, Ltd., Swinton.

Wallasey. — Adaptations at "Redcliffe," Egremont Promenade, for B.C.: *S. Burrows & Sons, Ltd., Hoylake-rd., Moreton.

Whitley Bay.—Erection of a further 32 houses in Cotswold-av. on the Foxhunters' site, for U.D.C. E. Roberts, Surveyor: *J. W. Urpeth, Bedlington, Northumberland.

Worsley.—Further 199 houses at Little Hulton, for U.D.C.: *G. & J. Seddon, Ltd., Manchester-rd., Little Hulton, nr. Manchester.

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